T. O. 12R2-2ARC3-2
(Formerly 16-30ARC3-3)

HANDBOOK
MAINTENANCE INSTRUCTIONS

RADIO SETS
AN/ARC-3
AN/ARC-36
AN/ARC-49

(SYLVANIA ELECTRIC PRODUCTS INC.)

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TABLE OF CONTENTS

Section *Page*

Table of Contents i
List of Illustrations iv
list of Tables viii
Safety Notice ix
Introduction 1-1

I. GENERAL DESCRIPTION

1. General 1-1
  a. Purpose of Equipment 1-1
  b. Major Assemblies 1-1
  c. Frequency Range 1-1
  d. Power Input Requirements 1-5
  e. Power Output 1-5
2. Equipment Supplied 1-5
3. Equipment Required but Not Supplied 1-6
4. Description of Major Assemblies 1-7
  a. General 1-7
  b. Radio Transmitter 1-8
  c. Radio Receiver 1-12
  d. Power Junction Box J-68/ARC-3 or J-68A/ARC-3 1-16
  e. Control Box C-118/ARC-3 or C-118A/ARC-3 1-17
  f. Control Unit C-197/ARC-3 1-18
  g. Antenna Mast AN-104-B 1-20
  h. Control Panel C-404/A or C-404A/A 1-20
  i. Control, Radio Set C-1400/ARC-49 1-21
5. Interchangeability of Major Assemblies 1-21

II. INSTALLATION AND ADJUSTMENT

1. Installation .... 1-22—2-0
  a. Preliminary Procedure .... 1-22—2-0
    (1) Unpacking .... 1-22—2-0
    (2) Bench Test .... 1-22—2-0
    (3) Test Results 2-2
  b. Installation 2-2
    (1) Mounting Base Installation 2-2
    (2) Mounting Major Assemblies on Bases 2-3
  c. Fabrication of Cording 2-4
    (1) General 2-4
    (2) Tools Required 2-4
    (3) Procedure 2-4
    (4) Antenna Cables 2-4
  d. Interconnecting Assemblies 2-5
  e. Parallel Operation of Medium Frequency Receiver 2-5
  f. Installation Inspection 2-5
2. Adjustment 2-6
  a. Selecting the Proper Crystals 2-6

Section *Page*

    (1) Transmitter 2-6
    (2) Receiver 2-6
  b. Setting Up Channels 2-6
    (1) Transmitter 2-6
    (2) Receiver 2-7
  c. Adjustment of Squelch Control 2-7
3. Performance Test 2-8
  a. General 2-8
  b. Procedure 2-8
  c. Test Results .... 2-9—3-1

III. OPERATION

1. General .... 2-9—3-1
2. Starting and Stopping the Equipment .... 2-9—3-1
  a. To Start the Equipment .... 2-9—3-1
  b. To Stop the Equipment .... 2-9—3-1
    (1) Radio Sets AN/ARC-3 or AN/ARC-36 .... 2-9—3-1
    (2) Radio Set AN/ARC-49 3-2
3. Operation 3-2
  a. Preliminary 3-2
  b. Procedure 3-2

IV. THEORY OF OPERATION

1. General 4-1
  a. Purpose 4-1
  b. Function 4-1
2. Detailed Functioning 4-1
  a. Radio Transmitter T-67/ARC-3, T-67A/ARC-3, T-67B/ARC-3, T-312/ARC-36, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49 4-1
    (1) RF Circuits 4-1
    (2) Audio Circuits 4-2
    (3) Tuning System 4-3
  b. Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36, R-428B/ARC-36, or R-608/ARC-49 4-3
    (1) Antenna Circuit and RF Amplifier 4-5
    (2) Harmonic Generator Circuit 4-5
    (3) First Detector 4-7
    (4) IF Amplifier Stages 4-7
    (5) AVC System 4-7
    (6) Second Detector and Noise Limiter 4-8
    (7) Audio Amplifier Circuits 4-9
    (8) Tuning System 4-10
  c. Power Junction Box J-68/ARC-3 or J68A/ARC-3 4-10

TABLE OF CONTENTS (Cont.)

Section *Page*

- *d.* Control Box C-118/ARC-3 or C-118A/ARC-3 4-10
- *e.* Control Unit C-197/ARC-3............ 4-10
- *f.* Control Panel C-404/A or C-404A/A.... 4-10
- *g.* Control, Radio Set C-1400/ARC-49..... 4-10
- *h.* Mounting MT-798A/U 4-11
- *i.* Crystal Socket Adapters UG-613A/U and UG-614A/U 4-11

3. Mechanical Characteristics and Controls.... 4-11
   - *a.* General 4-11
     - (1) Controls—Receiving Position...... 4-11
     - (2) Controls—Transmitting Position.... 4-11
   - *b.* Transmitter Tuning Control System..... 4-11
     - (1) Basic Elements.................... 4-11
     - (2) Clutch-Brake Assembly............ 4-13
     - (3) Operation of Tuning Control System for Radio Transmitter T-67/ARC-3 or T-312/ARC-36 Without Modification M-3 4-13
     - (4) Operation of Tuning Control System for Radio Transmitter T-67/ARC-3 or T-312/ARC-36 with Modification M-3 and Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49 4-19
   - *c.* Receiver Tuning Control System........ 4-28
     - (1) Basic Elements.................... 4-28
     - (2) Clutch-Brake Assembly............ 4-28
     - (3) Operation 4-29

V. MAINTENANCE

1. Inspection 5-1
   - *a.* Preflight Inspection.................. 5-1
   - *b.* 25-Hour Inspection................... 5-1
   - *c.* 100-Hour Inspection 5-1
2. Trouble Shooting Installed Equipment..... 5-2
   - *a.* Transmitter Trouble Chart............. 5-2
   - *b.* Receiver Trouble Chart................ 5-3
   - *c.* AN/ARC-49 Rotary Solenoid Switch Trouble Chart 5-3
3. Trouble Shooting at Repair Station........ 5-4
   - *a.* Preliminary 5-4
   - *b.* Vacuum Tube Socket Voltages.......... 5-4
     - (1) Transmitter 5-4
     - (2) Receiver 5-5
   - *c.* Resistance Measurements.............. 5-9
4. Replacement of Tubes, Fuses, Dynamotor Brushes, and Crystals.................. 5-16
   - *a.* Vacuum Tubes........................ 5-16
   - *b.* Fuse Replacement.................... 5-16
   - *c.* Dynamotor Brush Replacement......... 5-17
   - *d.* Crystal Replacement.................. 5-18

Section *Page*

5. Special Maintenance Operations and Adjustments 5-18
   - *a.* Adjustments of Cam O-101 (Transmitter) 5-18
   - *b.* Adjustments of Cam O-202 (Receiver).. 5-18
   - *c.* Adjustment of Cam O-201 (Receiver)... 5-18
   - *d.* Manual Tuning....................... 5-18
     - (1) Transmitter 5-18
     - (2) Receiver 5-19
   - *e.* Relays 5-19
   - *f.* Cam O-101 (Transmitter)............ 5-19
     - (1) Disassembly 5-19
     - (2) Reassembly 5-19
   - *g.* Variable Capacitor C-115 (Transmitter). 5-19
     - (1) Disassembly 5-19
     - (2) Reassembly 5-19
   - *h.* Variable Capacitor C-129 (Transmitter). 5-19
     - (1) Disassembly 5-19
     - (2) Reassembly 5-21
   - *i.* Variable Capacitors C-106 or C-122 (Transmitter) 5-21
     - (1) Disassembly 5-21
     - (2) Reassembly 5-21
   - *j.* Variable Capacitor Worm Drive Gears (Transmitter) 5-21
     - (1) Disassembly 5-21
     - (2) Reassembly 5-21
   - *k.* Motor Drive Assembly (Receiver)...... 5-21
     - (1) Disassembly 5-21
     - (2) Reassembly 5-21
   - *l.* Tuning Assembly (Receiver)........... 5-21
     - (1) Disassembly 5-21
     - (2) Reassembly 5-22
   - *m.* Front Panel Assembly (Receiver)....... 5-22
     - (1) Disassembly..................... 5-22
     - (2) Reassembly 5-22
   - *n.* Harmonic Selector Switch Assembly (Receiver) 5-22
     - (1) Disassembly..................... 5-22
     - (2) Reassembly 5-22
   - *o.* Capacitor Drive Gear O-204 (Receiver). 5-22
     - (1) Disassembly..................... 5-22
     - (2) Reassembly 5-22
   - *p.* IF and AF Assembly (Receiver)........ 5-24
     - (1) Disassembly..................... 5-24
     - (2) Reassembly 5-24
   - *q.* Oscillator and Motor Control Assembly (Receiver) 5-24
     - (1) Disassembly..................... 5-24
     - (2) Reassembly 5-24
   - *r.* RF Tube Socket (Receiver)............ 5-24
     - (1) Disassembly..................... 5-24
     - (2) Reassembly 5-24
   - *s.* Crystal Panel Assembly (AN/ARC-49 Radio Transmitter) 5-24
     - (1) Disassembly..................... 5-24
     - (2) Reassembly 5-24

TABLE OF CONTENTS (Cont.)

Section *Page*

- *t.* Motor Drive Units for AN/ARC-49 Radio Transmitter Switch Assemblies S-104 and S-105 5-24
  - (1) Disassembly 5-24
  - (2) Reassembly 5-25
- *u.* Crystal Selector Switch Assembly (AN/ARC-49 Radio Receiver) 5-25
  - (1) Disassembly 5-25
  - (2) Reassembly 5-25
- *v.* Motor Drive Units for AN/ARC-49 Radio Receiver Switch Assemblies S-205 and S-206 5-25
  - (1) Disassembly 5-25
  - (2) Reassembly 5-25

6. Checking Crystal Units 5-25

7. Lubrication 5-26
   - *a.* General 5-26
   - *b.* Points of Lubrication 5-26

8. Alignment of Transmitter 5-26
   - *a.* Equipment Required 5-26
   - *b.* Procedure 5-26

9. Alignment of Receiver 5-29
   - *a.* Equipment Required 5-29
   - *b.* IF Alignment 5-29
   - *c.* Crystal Oscillator Alignment 5-29
   - *d.* Fundamental Amplifier Alignment 5-30
   - *e.* Harmonic Generator Alignment 5-30
   - *f.* RF Alignment 5-30

VI. SUPPLEMENTARY DATA

1. Modifications of Radio Set AN/ARC-3 or AN/ARC-36 .... 5-31—6-1

2. Tube Complement and Base Connections 6-3
   - *a.* Radio Transmitter 6-3
   - *b.* Radio Receiver 6-3
   - *c.* Transmitter Tube Base Connections 6-3
   - *d.* Receiver Tube Base Connections 6-4

3. Fuse Complement 6-4

4. Frequency Range 6-5

5. Preset Frequencies 6-5

Section *Page*

6. AF Response Characteristics 6-5

7. Transmitter Frequency Stability 6-5

8. Receiver Frequency Stability 6-5

9. Noise Response 6-6

10. Receiver Distortion 6-6

11. Output and Input Impedances 6-6
    - *a.* Transmitter 6-6
    - *b.* Receiver 6-6

12. Power Output 6-6
    - *a.* Transmitter 6-6
    - *b.* Receiver 6-6

13. Power Input Requirements 6-6

14. Dynamotor Data 6-7
    - *a.* Dynamotor Unit DY-21/ARC-3 6-7
    - *b.* Dynamotor Unit DY-22/ARC-3 6-7

15. Modulation and Fidelity 6-9

16. Receiver Sensitivity 6-9

17. Receiver Selectivity 6-9
    - *a.* General 6-9
    - *b.* Total Bandwidth in Kilocycles 6-9

18. Automatic Volume Control Performance 6-9

19. Squelch Control 6-9

VII. TABLE OF REPLACEABLE PARTS

1. Content and Arrangement of Table 7-0

2. Ordering Spare Parts 7-0
   - *a.* General 7-0
   - *b.* U.S. Army Personnel 7-0

3. Explanation of Reference Symbols Appearing in Column One of Table of Replaceable Parts 7-0

4. Abbreviations 7-1

5. Index of Major Assemblies 7-2

6. Decimal Equivalents of Wire Gauges 7-2

Joint Army-Navy Type Designation Codes for Electrical Components 7-3

Table of Replaceable Parts 7-7

LIST OF ILLUSTRATIONS

Figure *Page*

1-1. Radio Set AN/ARC-3—Equipment Supplied 1-2
1-2. Radio Set AN/ARC-36—Equipment Supplied 1-3
1-3. Radio Set AN/ARC-49—Equipment Supplied 1-4
1-4. Radio Transmitter T-67/ARC-3, T-67A/ARC-3, or T-67B/ARC-3 on Mounting Base MT-238/ARC-3 1-8
1-5. Radio Transmitter T-67/ARC-3, T-67A/ARC-3, or T-67B/ARC-3—Crystal Compartment Door Open 1-9
1-6. Radio Transmitter T-312/ARC-36, T-312A/ARC-36, or T-312B/ARC-36 on Mounting Base MT-238C/ARC-3 1-9
1-7. Radio Transmitter T-312/ARC-36, T-312A/ARC-36, or T-312B/ARC-36 — Crystal Compartment Cover Removed 1-10
1-8. Radio Transmitter T-452/ARC-49 on Mounting Base MT-238C/ARC-3 1-10
1-9. Radio Transmitter T-452/ARC-49 — Crystal Compartment Door Open 1-11
1-10. Mounting Base MT-238/ARC-3 1-11
1-11. Mounting Base MT-238C/ARC-3 1-12
1-12. Radio Receiver R-77/ARC-3 on Mounting Base MT-237/ARC-3 1-12
1-13. Radio Receiver R-77A/ARC-3 or R-77B/ARC-3 on Mounting Base MT-237A/ARC-3 1-13
1-14. Radio Receiver R-77/ARC-3—Crystal Compartment Door Open 1-13
1-15. Radio Receiver R-428B/ARC-36 on Mounting Base MT-237C/ARC-3 1-14
1-16. Radio Receiver R-428B/ARC-36—Crystal Compartment Cover Removed 1-14
1-17. Radio Receiver R-608/ARC-49 on Mounting Base MT-237C/ARC-3 1-15
1-18. Radio Receiver R-608/ARC-49—Crystal Compartment Door Open 1-15
1-19. Mounting Base MT-237/ARC-3 1-16
1-20. Mounting Base MT-237C/ARC-3 1-16
1-21. Power Junction Box J-681/ARC-3 on Mounting Base MT-236/ARC-3 1-17
1-22. Power Junction Box J-68A/ARC-3 on Mounting Base MT-236B/ARC-3 1-18

Figure *Page*

1-23. Mounting Base MT-236/ARC-3 1-18
1-24. Mounting Base MT-236B/ARC-3 1-19
1-25. Control Box C-118/ARC-3 1-19
1-26. Control Box C-118/ARC-3 or C-118A/ARC-3—Bottom View 1-19
1-27. Control Box C-118/ARC-3 or C-118A/ARC-3—Rear-Diagonal View 1-19
1-28. Control Box C-118A/ARC-3 1-20
1-29. Mounting FT-240-A 1-20
1-30. Control Unit C-197/ARC-3 1-20
1-31. Antenna Mast AN-104-B 1-21
1-32. Control Panel C-404/A 1-21
1-33. Control Panel C-404(XA)/A 1-21
1-34. Control Panel C-404A/A 1-21
1-35. Control, Radio Set C-1400/ARC-49 .... 1-22—2-0
1-36. Control, Radio Set C-1400/ARC-49—Rear View .... 1-22—2-0
4-1. Radio Transmitter—Block Diagram 4-2
4-2. Radio Transmitter—Speech Amplifier 4-4
4-3. Radio Transmitter—Tone Oscillator 4-4
4-4. Radio Transmitter—Sidetone Circuit 4-5
4-5. Radio Receiver—Block Diagram 4-6
4-6. Radio Receiver—AVC Circuit 4-8
4-7. Radio Receiver—Noise Limiter Circuit .. 4-8
4-8. Radio Receiver—Squelch Circuit 4-9
4-9. Radio Transmitter T-67/ARC-3, T-67A/ARC-3, or T-67B/ARC-3 (Employing Control Box C-118/ARC-3 or C-118A/ARC-3)—Push-to-Talk Circuit 4-12
4-10. Radio Transmitter T-67/ARC-3 or T-312/ARC-36. Without Modification M-3 — Clutch-Brake Mechanism with Worm Gear Housing in Place 4-14
4-11. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 Without Modification M-3 — Drive Shaft and Variable Capacitor Gears. 4-15
4-12. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 Without Modification M-3 — Basic Tuning Control Circuit 4-16
4-13. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 Without Modification M-3 — Starting Relay Circuit 4-17

LIST OF ILLUSTRATIONS (Cont.)

Figure		Page
4-14.	Radio Transmitter and Radio Receiver—Time Delay, Located in Power Junction Box J-68/ARC-3 or J-68A/ARC-3	4-18
4-15.	Radio Transmitter T-67/ARC-3 or T-312/ARC-36 With Modification M-3, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36 — Capacitor Drive Assembly	4-19
4-16.	Radio Transmitter T-67/ARC-3 or T-312/ARC-36 With Modification M-3—Basic Tuning Control Circuit	4-20
4-17.	Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36—Basic Tuning Control Circuit	4-21
4-18.	Radio Transmitter T-67/ARC-3 or T-312/ARC-36 With Modification M-3—Starting Relay Circuit	4-22
4-19.	Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36—Starting Relay Circuit	4-23
4-20.	Radio Transmitter T-452/ARC-49—Starting Circuit	4-24
4-21.	Radio Transmitter T-452/ARC-49—Front Panel, Rear View	4-25
4-22.	Radio Receiver—Clutch-Brake Mechanism With Worm Gear Housing Remover	4-26
4-23.	Radio Receiver—Showing Variable Capacitors, Drive Shaft, Cams and Switches	4-27
4-24.	Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36, or R-428B/ARC-36 — Basic Tuning Control Circuit Including Modification M-2	4-29
4-25.	Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36, or R-428B/ARC-36 — Thumbwheel Frequency Selectors	4-30
4-26.	Radio Receiver R-608/ARC-49 — Front Panel Assembly, Rear View	4-31
4-27.	Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36 — Selector Switch Circuit	4-32
4-28.	Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36 — Starting Relay Circuit	4-33
4-29.	Radio Receiver R-608/ARC-49—Starting Circuit	4-34
5-1.	Radio Transmitter—Tube Socket Voltage Diagram	5-6
5-2.	Radio Receiver—Tube Socket Voltage Diagram	5-8
5-3.	Radio Transmitter—Terminal Board Diagram	5-10
5-4.	Radio Receiver—Terminal Board Diagram	5-17
5-5.	Radio Transmitter—Alignment Diagram	5-20
5-6.	Radio Receiver R-77A/ARC-3 or R-428A/ARC-36, B Series—Split Chassis Joint	5-23
5-7.	Radio Receiver R-77A/ARC-3 or R-428A/ARC-36, B Series—RF Miniature Tube Socket Mounting	5-25
5-8.	Radio Receiver—Alignment Diagram	5-28
6-1.	Radio Receiver—Fidelity Curve	6-5
6-2.	Radio Receiver—Sensitivity Curve	6-7
6-3.	Radio Receiver—IF Selectivity Curve	6-8
6-4.	Radio Receiver—AVC Curve	6-9
6-5.	Radio Transmitter T-67/ARC-3—Rear Diagonal View	6-14
6-6.	Radio Transmitter T-67/ARC-3 with Modification M-3—Interior Top View	6-15
6-7.	Radio Transmitter T-67/ARC-3—Front Diagonal View	6-16
6-8.	Radio Transmitter T-67/ARC-3—Rear View	6-16
6-9.	Radio Transmitter T-67/ARC-3 with M-3 Modification—Diagonal Rear View, Cover Removed	6-17
6-10.	Radio Transmitter T-67/ARC-3 with M-3 Modification—Diagonal Interior Bottom View	6-17
6-11.	Radio Transmitter T-67/ARC-3—Bottom View	6-18
6-12.	Radio Transmitter T-67/ARC-3—Top View	6-19
6-13.	Radio Transmitter T-67/ARC-3 with M-3 Modification—Top Interior View	6-20
6-14.	Radio Transmitter T-67A/ARC-3—Top Interior View	6-20
6-15.	Radio Transmitter T-67/ARC-3 with M-3 Modification—Bottom Interior View	6-21
6-16.	Radio Transmitter T-67B/ARC-3—Top Interior View	6-21
6-17.	Radio Transmitter T-67/ARC-3—Bottom View	6-22
6-18.	Radio Transmitter T-67B/ARC-3—Bottom View	6-23

LIST OF ILLUSTRATIONS (Cont.)

Figure		*Page*
6-19.	Radio Transmitter T-67B/ARC-3—Bottom View, Cover Removed	6-24
6-20.	Radio Transmitter T-452/ARC-49—Top Interior View	6-25
6-21.	Radio Transmitter T-452/ARC-49—Bottom View, Cover Removed	6-26
6-22.	Radio Transmitter T-452/ARC-49—Front Panel Assembly, Rear View	6-27
6-23.	Radio Receiver R-77/ARC-3, R-77A/ARC-3, or R-77B/ARC-3—Right Side	6-28
6-24.	Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3—Left Side	6-28
6-25.	Radio Receiver R-608/ARC-49—Right Side	6-29
6-26.	Radio Receiver R-608/ARC-49—Left Side	6-29
6-27.	Radio Receiver R-77/ARC-3—Rear View of Front Panel (with Note Applicable to Radio Receiver R-77A/ARC-3 or R-77B/ARC-3)	6-30
6-28.	Radio Receiver R-608/ARC-49—Rear View of Front Panel	6-31
6-29.	Radio Receiver R-77/ARC-3—Top View (with Note Applicable to Radio Receiver R-77A/ARC-3 or R-77B/ARC-3)	6-32
6-30.	Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3—Tuning Assembly	6-33
6-31.	Radio Receiver R-77/ARC-3 — Bottom View (with Notes Applicable to Radio Receiver R-77A/ARC-3 and M-2 Modification)	6-34
6-32.	Radio Receiver R-77B/ARC-3—Bottom View	6-35
6-33.	Radio Receiver R-608/ARC-49—Bottom View	6-36
6-34.	Radio Receiver R-77/ARC-3—Top View, Case On (with Notes Applicable to Radio Receiver R-77A/ARC-3 and M-2 Modification)	6-37
6-35.	Power Junction Box J-68/ARC-3—Right Side	6-38
6-36.	Power Junction Box J-68/ARC-3—Left Side	6-38
6-37.	Power Junction Box J-68/ARC-3—Top View with Dynamotor Unit DY-22/ARC-3 Removed	6-39
6-38.	Power Junction Box J-68/ARC-3—Bottom View (with Note Applicable to Modification M-1)	6-40
6-39.	Power Junction Box J-68A/ARC-3—Top View	6-41
6-40.	Power Junction Box J-68A/ARC-3—Bottom View, Cover Removed	6-42
6-41.	Control Box C-118/ARC-3—Side Cover Removed	6-43
6-42.	Control Box C-118A/ARC-3 (C-118/ARC-3 Modified by Installation of New Type Switch Assembly)—Interior View	6-44
6-43.	Control Unit C-197/ARC-3—Back Removed	6-45
6-44.	Control Panel C-404/A—Front View	6-45
6-45.	Control Panel C-404(XA)/A—Front View	6-46
6-46.	Control Panel C-404A/A—Front View	6-46
6-47.	Control Panel C-404A/A—Rear Diagonal View	6-47
6-48.	Control, Radio Set C-1400/ARC-49—Front View	6-47
6-49.	Control, Radio Set C-1400/ARC-49—Top View with Case Removed	6-48
6-50.	Modification Kit MX-1131A/ARC-3 (with Rear View of Crystal Socket Adapter Units)	6-49
8-1.	Radio Set AN/ARC-3—Cording Diagram	8-2
8-2.	Radio Set AN/ARC-36—Cording Diagram	8-3
8-3.	Radio Set AN/ARC-49—Cording Diagram	8-4
8-4.	Radio Transmitter T-67/ARC-3, T-67A/ARC-3 or T-67B/ARC-3—Outline Drawing and Mounting Dimensions	8-5
8-5.	Radio Transmitter T-312/ARC-36, T-312A/ARC-36 or T-312B/ARC-36—Outline Drawing and Mounting Dimensions	8-6
8-6.	Radio Transmitter T-452/ARC-49—Outline Drawing and Mounting Dimensions	8-7
8-7.	Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3—Outline Drawing and Mounting Dimensions	8-8
8-8.	Radio Receiver R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36 — Outline Drawing and Mounting Dimensions	8-9
8-9.	Radio Receiver R-608/ARC-49—Outline Drawing and Mounting Dimensions	8-10
8-10.	Power Junction BoxJ-68/ARC-3 or J-68A/ARC-3—Outline Drawing and Mounting Dimensions	8-11
8-11.	Control Box C-118/ARC-3 or C-118A/ARC-3—Outline Drawing and Mounting Dimensions	8-12

LIST OF ILLUSTRATIONS (Cont.)

Figure *Page*

8-12. Control Panel C-404/A or C-404A/A — Outline Drawing and Mounting Dimensions 8-13

8-13. Control, Radio Set C-1400/ARC-49—Outline Drawing and Mounting Dimensions . . 8-14

8-14. Antenna Mast AN-104-B—Outline Drawing and Mounting Dimensions 8-15

8-15. Antenna Mast AN-104-B—Internal Connections 8-16

8-16. Radio Sets AN/ARC-3, AN/ARC-36 and AN/ARC-49 — Preparation of Antenna Lead-in 8-17

8-17. Radio Set AN/ARC-3—Fighter Installation Cording Diagram . . . . 8-19—8-20

8-18. Radio Set AN/ARC-36—Multiplace Installation Cording Diagram . . . . 8-21—8-22

8-19. Radio Set AN/ARC-36—Installation Cording Diagram 8-23

8-20. Radio Set AN/ARC-49—Installation Cording Diagram . . . . 8-25—8-26

8-21. Radio Transmitter T-67/ARC-3 — Schematic Diagram Showing Early Production Wiring of K-104 and Modification M-1, M-2 and M-3 . . . . 8-27—8-28

8-22. Radio Transmitter T-67/ARC-3 — Schematic Diagram Showing Early Production Wiring of K-104 and Modification M-1 and M-3 . . . . 8-29—8-30

8-23. Radio Transmitter T-67/ARC-3 — Schematic Diagram Showing Modifications M-1, M-2 and M-3 (With Note Applicable to Transmitters with Serial Number Prefix "B") . . . . 8-31—8-32

8-24. Radio Transmitter T-67A/ARC-3—Schematic Diagram . . . . 8-33—8-34

8-25. Radio Transmitter T-67B/ARC-3—Schematic Diagram . . . . 8-35—8-36

8-26. Crystal Socket Adapter UG-613A/U—Schematic Diagram . . . . 8-37—8-38

8-27. Radio Transmitter T-452/ARC-49—Schematic Diagram . . . . 8-39—8-40

8-28. Radio Receiver R-77/ARC-3—Schematic Diagram Showing Production Change Converting Radio Receiver R-77/ARC-3 to R-77A/ARC-3 and Modifications M-1 and M-2 . . . . 8-41—8-42

8-29. Radio Receiver R-77B/ARC-3—Schematic Diagram . . . . 8-43—8-44

Figure *Page*

8-30. Crystal Socket Adapter UG-614A/U—Schematic Diagram . . . . 8-45—8-46

8-31. Radio Receiver R-608/ARC-49—Schematic Diagram . . . . 8-47—8-48

8-32. Power Junction Box J-68/ARC-3—Schematic Diagram Showing Production Change and Modification M-1 and M-2 . 8-49—8-50

8-33. Power Junction Box J-68A/ARC-3—Schematic Diagram . . . . 8-51—8-52

8-34. Control Box C-118/ARC-3—Schematic Diagram . . . . 8-53—8-54

8-35. Control Box C-118A/ARC-3—Schematic Diagram 8-55

8-36. Control Panel C-404/A or C-404A/A—Schematic Diagram 8-56

8-37. Control, Radio Set C-1400/ARC-49—Schematic Diagram . . . . 8-57—8-58

8-38. Radio Set AN/ARC-3—Overall Schematic For Fighter Installations Showing Early Production Wiring and All Modifications and Production Changes . . . . 8-59—8-60

8-39. Radio Set AN/ARC-3—Overall Schematic For Fighter Installation . . . . 8-61—8-62

8-40. Radio Set AN/ARC-49—Overall Schematic . . . . 8-63—8-64

8-41. Radio Transmitter T-67/ARC-3—Wiring Diagram Showing Early Production Wiring and Modification M-3 . . . . 8-65—8-66

8-42. Radio Transmitter T-67/ARC-3—Wiring Diagram Showing Latest Production Wiring and Modification M-3 . . . . 8-67—8-68

8-43. Radio Transmitter T-67/ARC-3—Wiring Diagram Showing M-3 Modification and Latest Production Wiring of Transmitters With Serial Number Prefix "B" . . . . . 8-69—8-70

8-44. Radio Transmitter T-67A/ARC-3—Wiring Diagram . . . . 8-71—8-72

8-45. Radio Transmitter T-67B/ARC-3—Wiring Diagram . . . . 8-73—8-74

8-46. Crystal Socket Adapter UG-613A/U—Wiring Diagram . . . . 8-75—8-76

8-47. Radio Transmitter T-452/ARC-49—Wiring Diagram . . . . 8-77—8-78

8-48. Radio Receiver R-77/ARC-3 — Wiring Diagram Showing Early Production Wiring and All Production Changes, Including Change Converting R-77/ARC-3 to R-77A/ARC-3, and Modifications M-1 and M-2 . . . . 8-79—8-80

LIST OF ILLUSTRATIONS (Cont.)

Figure *Page*
8-49. Radio Receiver R-77B/ARC-3—Wiring Diagram ....8-81—8-82
8-50. Crystal Socket Adapter UG-614A/U—Wiring Diagram ....8-83—8-84
8-51. Radio Receiver R-608/ARC-49—Wiring Diagram ....8-85—8-86
8-52. Radio Receiver—Coil Assembly Wiring Diagram ....8-87—8-88
8-53. Power Junction Box J-68/ARC-3—Wiring Diagram Including Modifications M-1 and M-2 ....8-89—8-90
8-54. Power Junction Box J-68A/ARC-3—Wiring Diagram ....8-91—8-92
8-55. Control Box C-118/ARC-3—Wiring Diagram ....8-93—8-94
8-56. Control Box C-118A/ARC-3—Wiring Diagram ....8-95—8-96
8-57. Control Panel C-404/A and C-404A/A—Wiring Diagram ....8-97—8-98
8-58. Control, Radio Set C-1400/ARC-49—Wiring Diagram....................8-99—8-100

LIST OF TABLES

Table *Page*
5-1. Transmitter Trouble Chart.............. 5-2
5-2. Receiver Trouble Chart.................. 5-3
5-3. AN/ARC-49 Rotary Solenoid Switch Trouble Chart........................ 5-4
5-4. Tube Socket Voltage Measurements for the Radio Transmitter..................... 5-4
5-5. Tube Socket Voltage Measurements for the Radio Receiver 5-5
5-6. Resistance Measurements for the Radio Transmitter 5-9
5-7. Resistance Measurements for the Radio Receiver 5-12
5-8. Resistance Measurements for Power Junction Box J-68/ARC-3 or J-68A/ARC-3.... 5-14
5-9. Resistance Measurements for Control Box C-118/ARC-3 5-14
5-10. Resistance Measurements for Control Box C-118A/ARC-3 5-15
5-11. Resistance Measurements for Control Panel C-404/A or C-404A/A........... 5-15
5-12. Resistance Measurements for Control, Radio Set C-1400/ARC-49.............. 5-15
5-13. 1000-cycle inductance of chokes......... 5-15
5-14. Resistance of Chokes and Transformers... 5-15
5-15. Resistance of Rotary Solenoid Motors.... 5-16
6-1. Transmitter Tube Complement.......... 6-3
6-2. Receiver Tube Complement............. 6-3
6-3. Transmitter Tube Base Connections...... 6-3
6-4. Receiver Tube Base Connections......... 6-4
6-5. Radio Set AN/ARC-3—Current Drain.... 6-6
6-6. Radio Set AN/ARC-36—Current Drain.. 6-6
6-7. Radio Set AN/ARC-49—Current Drain.. 6-7
6-8. Crystal VS. Carrier Frequencies.......... 6-10
6-9. Frequencies and Settings for Operation of Radio Set AN/ARC-49................ 6-12

SAFETY NOTICE

Operation of this equipment involves the use of high voltages which are dangerous to life. Operating personnel must at all times observe all safety regulations. Do not change tubes or make adjustments inside the equipment with the high voltage supply on.

Do not depend upon door switches on interlocks for protection; always shut down the motor generator or other equipment. Under certain conditions dangerous potentials may exist in circuits with the power controls in the off position because of charges retained by capacitors, etc.

To avoid casualties always discharge and ground circuits prior to touching them.

INTRODUCTION

Instructions in this handbook cover both modified and unmodified Radio Sets AN/ARC-3, AN/ARC-36, and AN/ARC-49. In modified equipments, changes have been made in the following components: AN/ARC-3 or AN/ARC-36 Radio Transmitters and Receivers, AN/ARC-3 Power Junction Boxes, AN/ARC-3 Control Boxes, and AN/ARC-3 Control Panels. The modifications indicated above do not affect interchangeability of components, but in Radio Set AN/ARC-3 and AN/ARC-36 equipments with a modified transmitter and receiver and in Radio Set AN/ARC-49 equipments with an unmodified transmitter and receiver the tuning motor will delay approximately 30 to 45 seconds when the equipment is first turned on. Subsequent channel shifting will not be affected and at the end of a short tone signal, the equipment is ready for use. However, if the Radio Set AN/ARC-3 or AN/ARC-36 transmitters or receivers are used with Control Box C-118/ARC-3, the tuning motors will run continuously if all channel buttons are left up. For this reason unmodified Control Boxes C-118/ARC-3 should be tagged or labeled with the following statement: "This control box is unmodified. One channel button must be depressed at all times to prevent continuous operation of, and damage to, the tuning motor."

A general reference, such as "The Radio Transmitter," "The Radio Receiver," "The Control Box," or "The Control Panel" is made throughout this handbook when instructions are applicable to modified or unmodified Radio Sets AN/ARC-3, AN/ARC-36, and AN/ARC-49. (Reference to "The Control Panel" will include Control, Radio Set C-1400/ARC-49). When instructions are applicable to only one type, specific reference is made to that type.

SECTION I

GENERAL DESCRIPTION

1. GENERAL

a. PURPOSE OF EQUIPMENT.—Radio Sets AN/ARC-3, AN/ARC-36 and AN/ARC-49 are airborne receiving and transmitting equipments designed to provide plane-to-plane or plane-to-ground communication. These models are all similar, the major difference being that the Radio Set AN/ARC-3 has eight frequency channels, Radio Set AN/ARC-36 has sixteen and Radio Set AN/ARC-49 has forty-eight. Remote operation of the equipments on any frequency channel is accomplished by selecting the desired channel on a control box or control panel. The transmitter and the receiver are coordinated with a control box or control panel in such a manner that both will operate on preset frequency channels in combination with other equipment similarly preset.

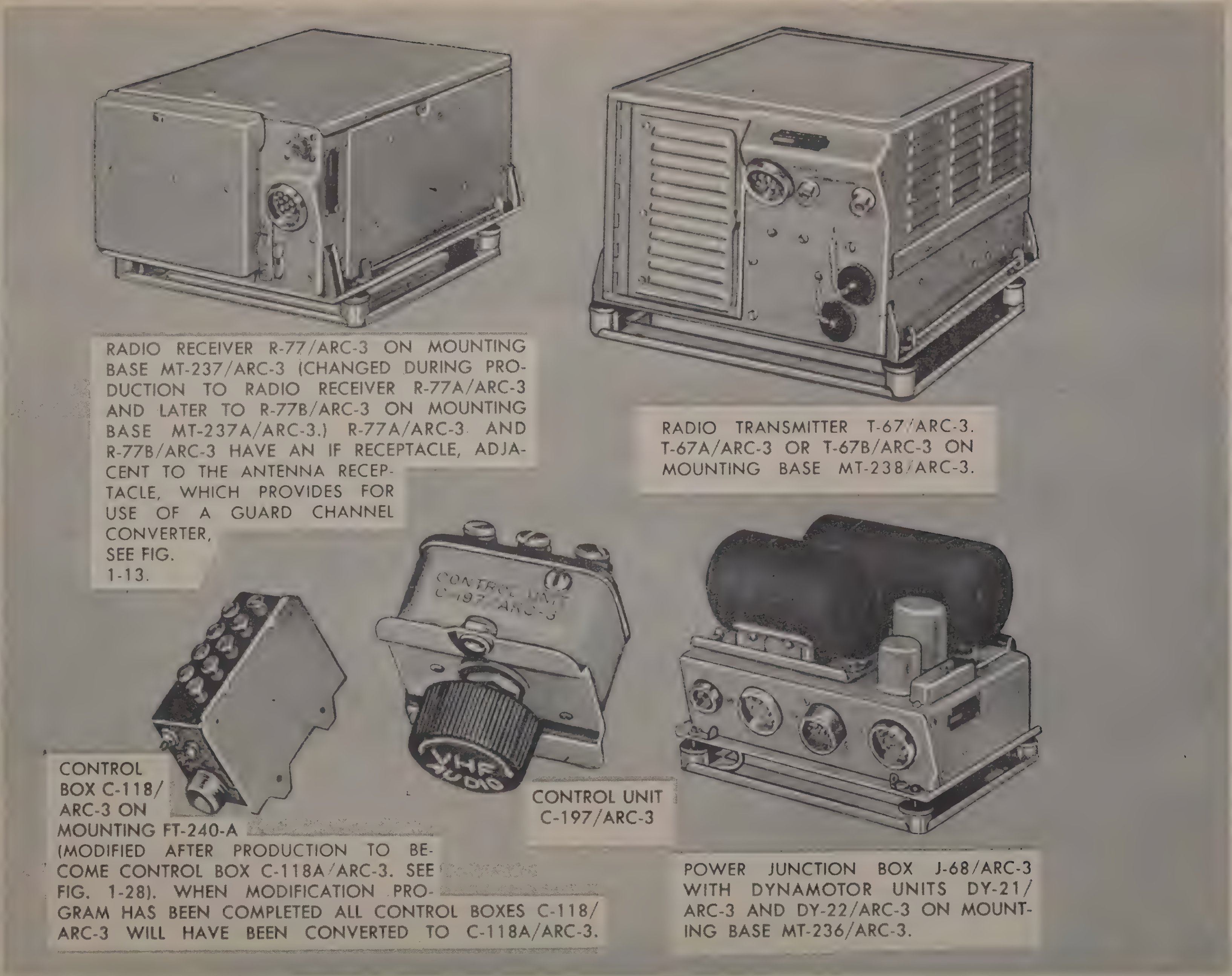
b. MAJOR ASSEMBLIES.

(1) RADIO SET AN/ARC-3.—Radio Set AN/ARC-3 consists of the following major assemblies: Radio Transmitter T-67/ARC-3, T-67A/ARC-3 or T-67B/ARC-3; Radio Receiver R-77/ARC-3, R-77A/ARC-3, or R-77B/ARC-3; Power Junction Box J-68/ARC-3 or J-68A/ARC-3 with Dynamotor Units DY-21/ARC-3 and DY-22/ARC-3; Control Box C-118/ARC-3 or C-118A/ARC-3; Control Unit C-197/ARC-3 (used in fighter installations only); and Control Panel C-404/A or C-404A/A. Control Panel C-404/A or C-404A/A may be used in place of Control Box C-118/ARC-3 or C-118A/ARC-3, in which case Control Unit C-197/ARC-3 is not used. See Figure 1-1.

(2) RADIO SET AN/ARC-36.—Radio Set AN/ARC-36 consists of the following major assemblies: Radio Transmitter T-312/ARC-36, T-312A/ARC-36 or T-312B/ARC-36; Radio Receiver R-428/ARC-36, R-428A/ARC-36, or R-428B/ARC-36; Mounting MT-798A/U, Power Junction Box J-68/ARC-3 or J-68A/ARC-3 with Dynamotor Units DY-21/ARC-3 and DY-22/ARC-3; Control Box C-118/ARC-3 or C-118A/ARC-3; Control Unit C-197/ARC-3 (used in fighter installations only); and Control Panel C-404/A or C-404A/A. Control Panel C-404/A or C-404A/A may be used in place of Control Box C-118/ARC-3 or C-118A/ARC-3, in which case Control Unit C-197/ARC-3 is not used. See Figure 1-2.

(3) RADIO SET AN/ARC-49.—Radio Set AN/ARC-49 consists of the following major assemblies: Radio Transmitter T-452/ARC-49; Radio Receiver R-608/ARC-49; Control, Radio Set C-1400/ARC-49; and Power Junction Box J-68/ARC-3 or J-68A/ARC-3 with Dynamotor Units DY-21/ARC-3 and DY-22/ARC-3. See Figure 1-3.

c. FREQUENCY RANGE.—The equipment operates over a "line of sight" distance within the 100-to-156 megacycle frequency range. Eight crystal-controlled channels for transmission and reception are available in Radio Set AN/ARC-3, sixteen in Radio Set AN/ARC-36



RADIO RECEIVER R-77/ARC-3 ON MOUNTING BASE MT-237/ARC-3 (CHANGED DURING PRODUCTION TO RADIO RECEIVER R-77A/ARC-3 AND LATER TO R-77B/ARC-3 ON MOUNTING BASE MT-237A/ARC-3.) R-77A/ARC-3 AND R-77B/ARC-3 HAVE AN IF RECEPTACLE, ADJACENT TO THE ANTENNA RECEPTACLE, WHICH PROVIDES FOR USE OF A GUARD CHANNEL CONVERTER, SEE FIG. 1-13.

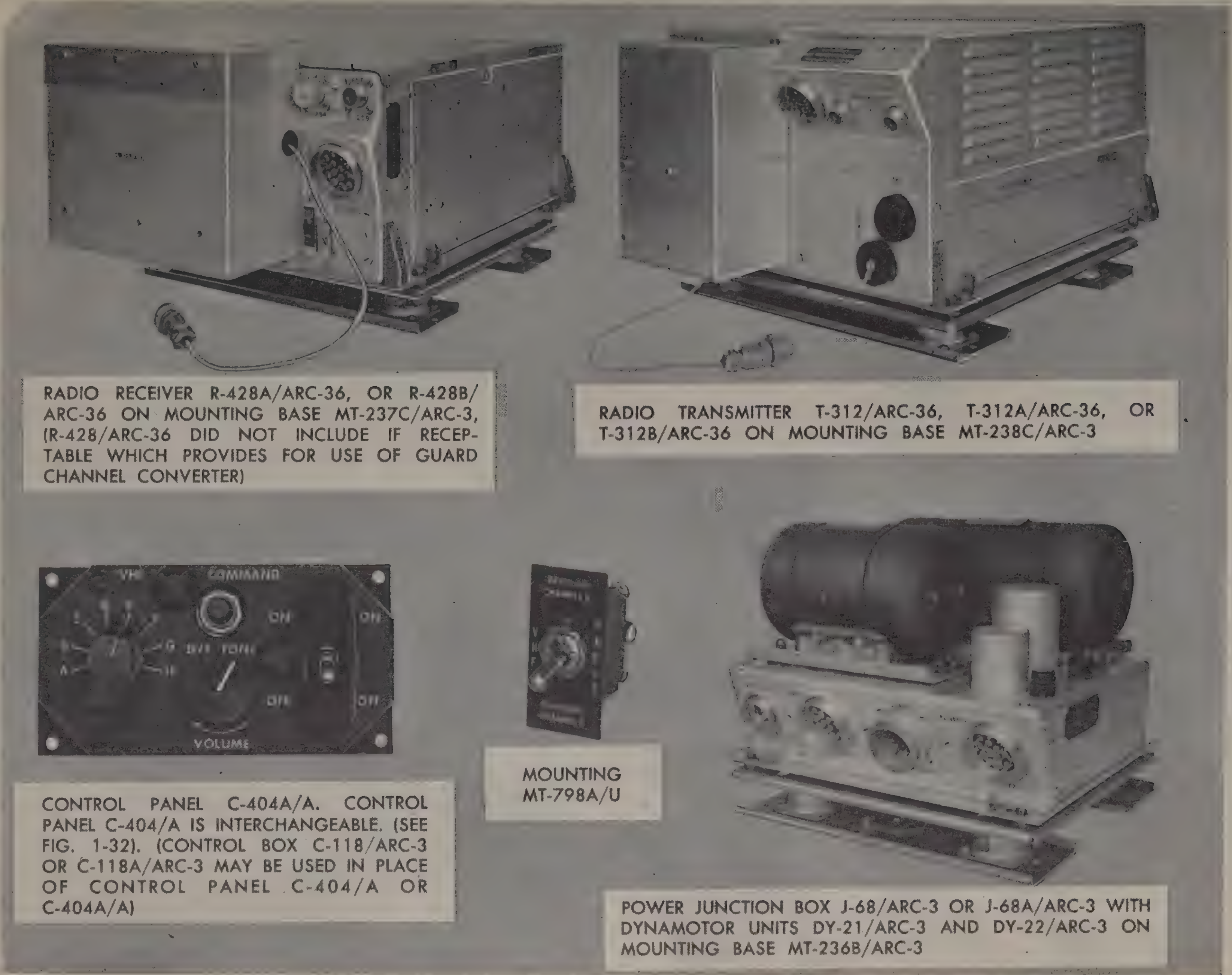
RADIO TRANSMITTER T-67/ARC-3. T-67A/ARC-3 OR T-67B/ARC-3 ON MOUNTING BASE MT-238/ARC-3.

CONTROL BOX C-118/ARC-3 ON MOUNTING FT-240-A (MODIFIED AFTER PRODUCTION TO BECOME CONTROL BOX C-118A/ARC-3. SEE FIG. 1-28). WHEN MODIFICATION PROGRAM HAS BEEN COMPLETED ALL CONTROL BOXES C-118/ARC-3 WILL HAVE BEEN CONVERTED TO C-118A/ARC-3.

CONTROL UNIT C-197/ARC-3

POWER JUNCTION BOX J-68/ARC-3 WITH DYNAMOTOR UNITS DY-21/ARC-3 AND DY-22/ARC-3 ON MOUNTING BASE MT-236/ARC-3.

Figure 1-1. Radio Set AN/ARC-3 — Equipment Supplied



RADIO RECEIVER R-428A/ARC-36, OR R-428B/ARC-36 ON MOUNTING BASE MT-237C/ARC-3, (R-428/ARC-36 DID NOT INCLUDE IF RECEPTABLE WHICH PROVIDES FOR USE OF GUARD CHANNEL CONVERTER)

RADIO TRANSMITTER T-312/ARC-36, T-312A/ARC-36, OR T-312B/ARC-36 ON MOUNTING BASE MT-238C/ARC-3

CONTROL PANEL C-404A/A. CONTROL PANEL C-404/A IS INTERCHANGEABLE. (SEE FIG. 1-32). (CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3 MAY BE USED IN PLACE OF CONTROL PANEL C-404/A OR C-404A/A)

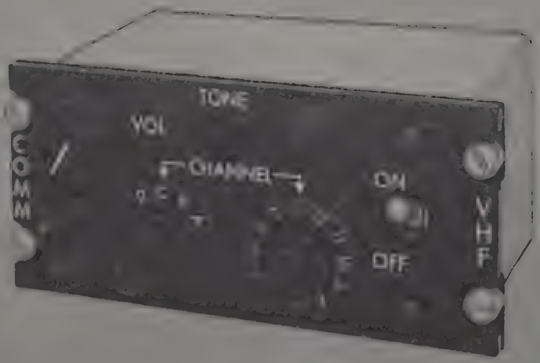
MOUNTING MT-798A/U

POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3 WITH DYNAMOTOR UNITS DY-21/ARC-3 AND DY-22/ARC-3 ON MOUNTING BASE MT-236B/ARC-3

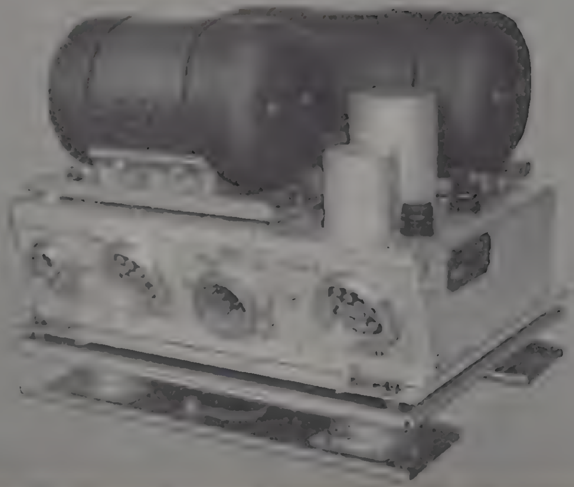
Figure 1-2. Radio Set AN/ARC-36 — Equipment Supplied

RADIO RECEIVER R-608/ARC-49 ON
MOUNTING BASE MT-237C/ARC-3

RADIO TRANSMITTER T-452/ARC-49
ON MOUNTING BASE MT-238C/ARC-3



CONTROL, RADIO SET C-1400/ARC-49



POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3 WITH DYNAMOTOR UNITS DY-21/ARC-3 AND DY-22/ARC-3 ON MOUNTING BASE MT-236B/ARC-3

Figure 1-3. Radio Set AN/ARC-49 — Equipment Supplied

and forty-eight in Radio Set AN/ARC-49. The equipment is constructed also to withstand long periods of high humidity and will give satisfactory operation at temperatures ranging from —55°C (—67°F) to +50°C (+122°F).

d. POWER INPUT REQUIREMENTS. — Normal operation of the equipment is from a 28-volt DC power source; however, it can be operated on voltages between 22 and 32 volts direct current. Current drain at the normal operating voltage and the two extremes are listed on the right.

Voltage	*Receiving*		*Transmitting*	
	AN/ARC-3 or AN/ARC-49	*AN/ARC-36*	*AN/ARC-3 or AN/ARC-49*	*AN/ARC-36*
22	5.0 amps	5.4 amps	9.9 amps	10.3 amps
28	5.5 amps	5.9 amps	12.0 amps	12.4 amps
32	6.3 amps	6.7 amps	13.5 amps	13.9 amps

e. POWER OUTPUT.—The power output of the transmitter is approximately 8 watts. The audio output of the receiver is approximately 600 milliwatts into a 50-ohm load when using the "LO" impedance output tap.

2. EQUIPMENT SUPPLIED.

The Table lists the equipment supplied giving quantity, name, type, dimensions, weight, and reference symbol. When equipments are common to one or more Radio Sets the equipment is listed under the appropriate heading.

Quantity	*Name of Unit*	*AN Type Designation*	*Overall Dimensions (Inches)*	*Overall Weight (Pounds)*	*Numerical Series of Ref. Symbols*
	Radio Set AN/ARC-3				
1	Radio Transmitter without mounting base, plugs or crystals, but including one set of vacuum tubes	T-67/ARC-3 T-67A/ARC-3 or T-67B/ARC-3	7½ x 12⅛ x 15¼	21.0	101-100
1	Radio Receiver without mounting base, plugs or crystals, but including one set of vacuum tubes	R-77/ARC-3 R-77A/ARC-3 or R-77B/ARC-3	6 x 11 x 14 5/16	20.5	201-399
	Radio Set AN/ARC-36				
1	Radio Transmitter without mounting base, plugs, or crystals, but including one set of vacuum tubes	T-312/ARC-36 T-312A/ARC-36 or T-312B/ARC-36	7½ x 12⅛ x 16⅞	22.6	101-199
1	Radio Receiver without mounting base, plugs or crystals, but includes one set of vacuum tubes	R-428/ARC-36 R-428A/ARC-36 or R-428B/ARC-36	6½ x 11 x 17¼	22.4	201-399
1	Mounting with switch	MT-798A/U	2 x 1 x 2 7/16	.1	
	Radio Sets AN/ARC-3 and AN/ARC-36				
1	Control Box without mount or plugs	C-118/ARC-3 or C-118A/ARC-3	6 x 2⅝ x 6⅞	2.1	501-599
1	Mounting	FT-240-A	5/16 x 5½ x 6⅜	0.3	
1	Control Unit (As Alternate for Above Equipment)	C-197/ARC-3	2 x 2 x 2½	0.3	801-899
1	Control Panel	C-404A/A or C-404/A	5 x 2⅝ x 2⅝	0.9	901-999
	Radio Set AN/ARC-49				
1	Radio Transmitter without mounting base or plugs, but including one set of vacuum tubes. (Crystals may or may not be supplied)	T-452/ARC-49	7½ x 12⅛ x 15¼	22.4	101-199
1	Radio Receiver without mounting base or plugs, but including one set of vacuum tubes. (Crystals may or may not be supplied)	R-608/ARC-49	6 x 11 x 15 9/16	21.5	201-399
1	Control, Radio Set	C-1400/ARC-49	5¾ x 2⅝ x 4⅝	1.5	601-699
	Radio Sets AN/ARC-3, AN/ARC-36 and AN/ARC-49				
1	Mounting Base	MT-238C/ARC-3	12½ x 11⅞ x 2⅛	1.8	
1	Mounting Base	MT-237C/ARC-3	11 5/16 x 10⅝ x 2⅛	1.6	
1	Power Junction Box without mounting base, plugs or dynamotors	J-68/ARC-3 or J-68A/ARC-3	3 3/16 x 8⅜ x 10 11/32	6.7	401-499
1	Dynamotor Unit	DY-21/ARC-3	4 x 3 7/16 x 7½	8.4	
1	Dynamotor Unit	DY-22/ARC-3	4 x 3 7/16 x 6½	4.8	
1	Mounting Base	MT-236B/ARC-3	10⅛ x 8½ x 2⅛	1.2	
1	Handbook of Operating Instructions			1.0	

3. EQUIPMENT REQUIRED BUT NOT SUPPLIED.

The Table lists the equipment required but not supplied. When equipments are common to one or more Radio Sets the equipment is listed under the appropriate heading.

Quantity	*Name of Unit*	*Required Characteristics*
	Radio Sets AN/ARC-3, AN/ARC-36 and AN/ARC-49	
1	Antenna Mast	AN-104-A or AN-104-B
1	Microphone	T-17 or equivalent
1 to 12	Headset	HS-23 or HS-33 or equivalent
2	Plugs	U-15/U (16- contact)
4	Plugs	PL-259 (for R-F cable RG-8/U)
2	Plugs	PL-153-A (18- contact)
1	Plug	PL-148-A (3- contact)
1	Phantom Transmitter Antenna TS-78/U	Provide proper antenna load for test purposes
1	Radio Test Set AN/ARM-1, containing the following: 1 Chest CY-146/ARM-1 1 Test Unit TS-178/ARM-1 1 Power Junction Box J-68/ARM-1 or J-68A/ARM-1 1 Dynamotor Unit DY-21/ARM-1 1 Dynamotor Unit DY-22/ARM-1 1 Set of Crystal Units 5555.55 Kc 6944.44 Kc 8000.00 Kc 8100.00 Kc 8458.00 Kc 8727.00 Kc 1 Control Box C-118/ARC-3 or C-118A/ARC-3 1 Cord CX-214/ARM-1 1 Cord CS-215/ARM-1 1 Cord CX-216/ARM-1 1 Tuning Wand MX-173/ARM-1 1 Alignment Tool MX-174/ARM-1 1 Set Relay Forming Tools 2 Adapter Plug PL-272 1 Shunting Unit MX-294/ARM-1 1 Shorting Plug U-30/ARM-1	Test equipment for adjustments and alignment
1	Cap MX-506/ARM-1	Motor Switch S-203 locking device
2	Plugs	U-16/U (24-contact)
1	Plug	PL-151-A
As Req'd.	Radio Frequency Cable RG-8/U	50 ohm
As Req'd.	Wire	AWG, No. 20
As Req'd.	Wire	AWG, No. 16
As Req'd.	Wire	AWG, No. 14
	Radio Sets AN/ARC-3 and AN/ARC-36	
	Crystal Units (Transmitter)	CR-1A/AR, DC-11-A, DC-16-A, or DC-26-A: 5,555.55 to 8,666.66 kilocycles
8	AN/ARC-3	
16	AN/ARC-36 (See Note on Par. 2a., Section II)	
	Crystal Units (Receiver)	CR-1A/AR, DC-11-A, DC-16-A, or DC-26-A: 8,000.00 to 8,727.00 kilocycles
8	AN/ARC-3	
16	AN/ARC-36 (See Note on Par. 2a., Section II)	
	Radio Set AN/ARC-49	
1	Control, Radio Set C-1400/ARC-49	
6	Crystal Units	CR-18/U: 5555.55, 8000.00, 8458.00, 6944.44, 8100.00 and 8727.00 kilocycles
1	Cord	Connects Receiver to Power Junction Box and Control Panel
1	Cord	Connects Power Junction Box to Control Panel
1	Cord	Connects Transmitter to Power Junction Box

Note

Cable lengths may vary with each particular airplane installation. Normally all cable wiring will be installed by the airplane contractor at the factory.

4. DESCRIPTION OF MAJOR ASSEMBLIES.

a. GENERAL.

(1) RADIO SET AN/ARC-3.—Radio Set AN/ARC-3 (See Fig. 1-1) comprises the following major assemblies:

Name of Unit	*AN Type Designation*
Radio Transmitter	T-67/ARC-3, T-67A/ARC-3 or T-67B/ARC-3
Radio Receiver	R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3
Power Junction Box	J-68/ARC-3 or J-68A/ARC-3
Dynamotor Unit	DY-21/ARC-3
Dynamotor Unit	DY-22/ARC-3
Control Box	C-118/ARC-3 or C-118A/ARC-3
Control Unit (used in fighter installations only)	C-197/ARC-3
Control Panel (may be used in place of Control Box C-118/ARC-3 or C-118A/ARC-3, in which case Control Unit C-197/ARC-3 is not used).	C-404/A or C-404A/A
Mounting Bases	MT-237C/ARC-3 MT-238C/ARC-3 MT-236B/ARC-3

(2) RADIO SET AN/ARC-36.—Radio Set AN/ARC-36 (See Fig. 1-2) comprises the following major assemblies:

Name of Unit	*AN Type Designation*
Radio Transmitter	T-312/ARC-36, T-312A/ARC-36 or T-312B/ARC-36
Radio Receiver	R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36
Power Junction Box	J-68/ARC-3 or J-68A/ARC-3
Dynamotor Unit	DY-21/ARC-3
Dynamotor Unit	DY-22/ARC-3
Control Box	C-118/ARC-3 or C-118A/ARC-3
Control Unit (used in fighter installations only)	C-197/ARC-3
Control Panel (may be used in place of Control Box C-118/ARC-3 or C-118A/ARC-3, in which case Control Unit C-197/ARC-3 is not used).	C-404/A or C-404A/A
Mounting	MT-798A/U
Mounting Bases	MT-237C/ARC-3 MT-238C/ARC-3 MT-236B/ARC-3

(3) RADIO SET AN/ARC-49.—Radio Set AN/ARC-49 (See Fig. 1-3) comprises the following major assemblies:

Name of Unit	*AN Type Designation*
Radio Transmitter	T-452/ARC-49
Radio Receiver	R-608/ARC-49
Power Junction Box	J-68/ARC-3 or J-68A/ARC-3
Dynamotor Unit	DY-21/ARC-3
Dynamotor Unit	DY-22/ARC-3
Control, Radio Set	C-1400/ARC-49
Mounting Bases	MT-237C/ARC-3 MT-238C/ARC-3 MT-236B/ARC-3

b. RADIO TRANSMITTER.

Note

A general reference, such as "Radio Transmitter," is made throughout this handbook when instructions are applicable to all versions.

(1) The Radio Transmitter contains nine tubes and provides a crystal-controlled RF power output of approximately 8 watts on any preselected channel. (See figs. 1-4 through 1-9.) Eight preselected channels are provided on Radio Transmitter T-67/ARC-3, T-67A/ARC-3, or T-67B/ARC-3; sixteen channels are provided on Radio Transmitter T-312/ARC-36, T-312A/ARC-36, or T-312B/ARC-36; and forty-eight channels are provided on Radio Transmitter T-452/ARC-49.

Note

Radio Transmitter T-67/ARC-3 is identical to Radio Transmitter T-312/ARC-36 except for change of crystal compartment cover, nameplate, and the addition of Crystal Socket Adapter UG-613A/U, Part of Modification Kit MX-1131A/ARC. The "A" and "B" versions are likewise identical except for the changes noted above.

Provisions are made in the Radio Transmitter for voice and tone modulation (MCW). When using voice modulation the carrier can be modulated approximately 85 percent. When using tone modulation the carrier can be modulated approximately 75 percent. An electrically operated channel selecting mechanism automatically selects one of the various channels when any one channel is selected on the control box or control panel at the remote control position. Transmitter and receiver channels for each frequency are selected simultaneously.

Transmitters having "M-1," or "M-3" stamped on the case near the nameplate, or transmitters with the letter "A" or "B" in their nomenclature, have been modified from the original production. (See par. 1, section VI for a summary of modifications).

Note

On Radio Set AN/ARC-36 the switch in Mounting MT-798A/U must be in the proper position to operate on either the regular or auxiliary bank of eight preselected channels.

(2) The entire transmitter, with the exception of its power supply, is housed in a metal cabinet having a removable bottom and "wrap around" top. (See fig. 1-4.) The removable top part forms the sides and back for that portion of the cabinet above the chassis. Entrance to the crystal compartment is through a metal door on the front panel. On the composition strip inside this compartment are sockets for installing crystals. (See figs. 1-5, 1-7, and 1-9.) Access to the crystal relay points for cleaning is through a removable metal strip on each side of the crystal compartment on Radio Sets AN/ARC-3 or AN/ARC-36. On Radio Set AN/

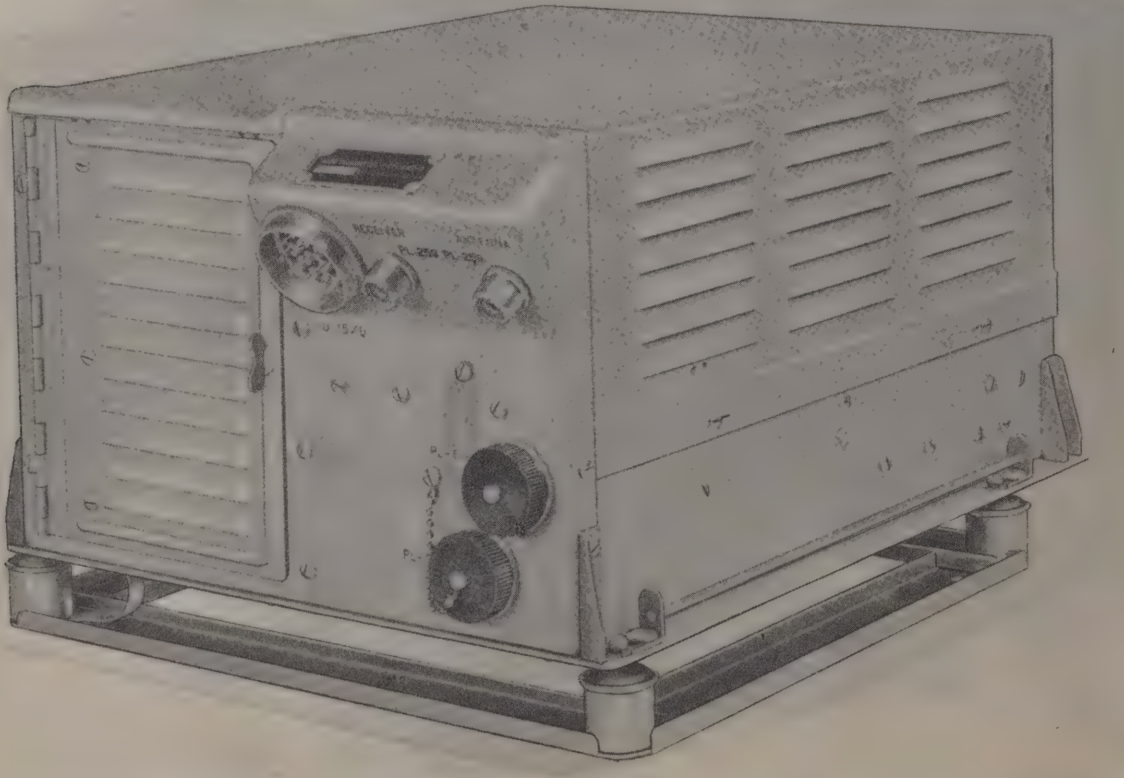


Figure 1-4. Radio Transmitter T-67/ARC-3, T-67A/ARC-3, or T-67B/ARC-3 on Mounting Base MT-238/ARC-3

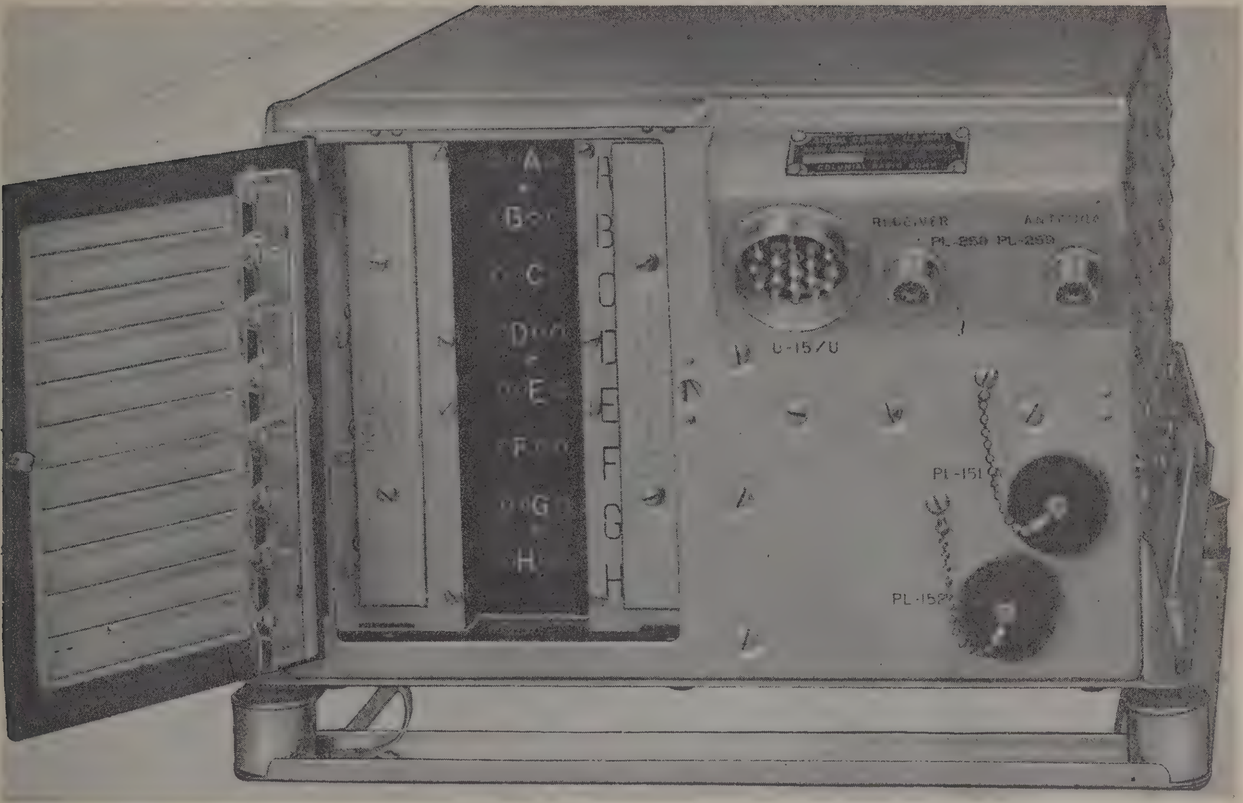

A
B
C
D
E
F
G
H
RECEIVER
ANTENNA
PL-259 PL-259
U-157/U
PL-151
PL-152

Figure 1-5. Radio Transmitter T-67/ARC-3, T-67A/ARC-3, or T-67B/ARC-3—Crystal Compartment Door Open

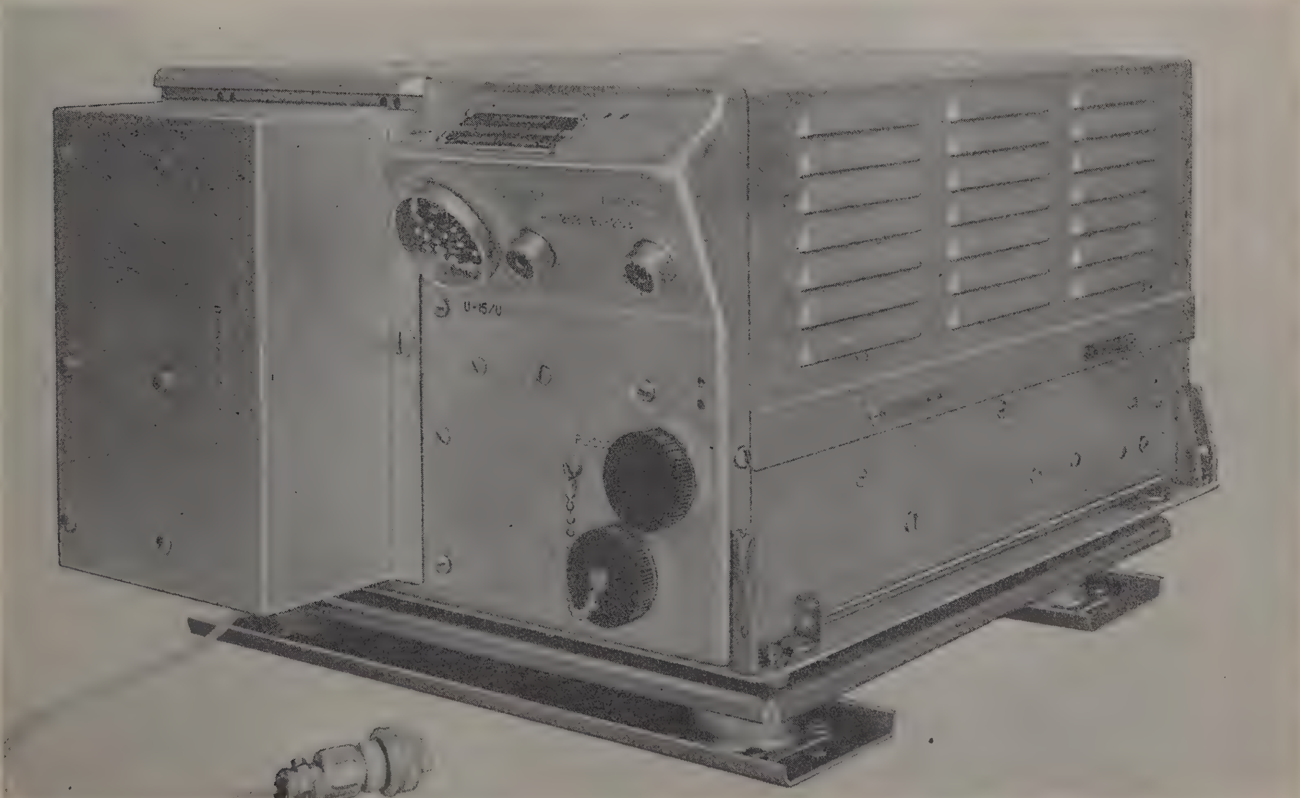


Figure 1-6. Radio Transmitter T-312/ARC-36, T-312A/ARC-36, or T-312B/ARC-36 on Mounting Base MT-238C/ARC-3

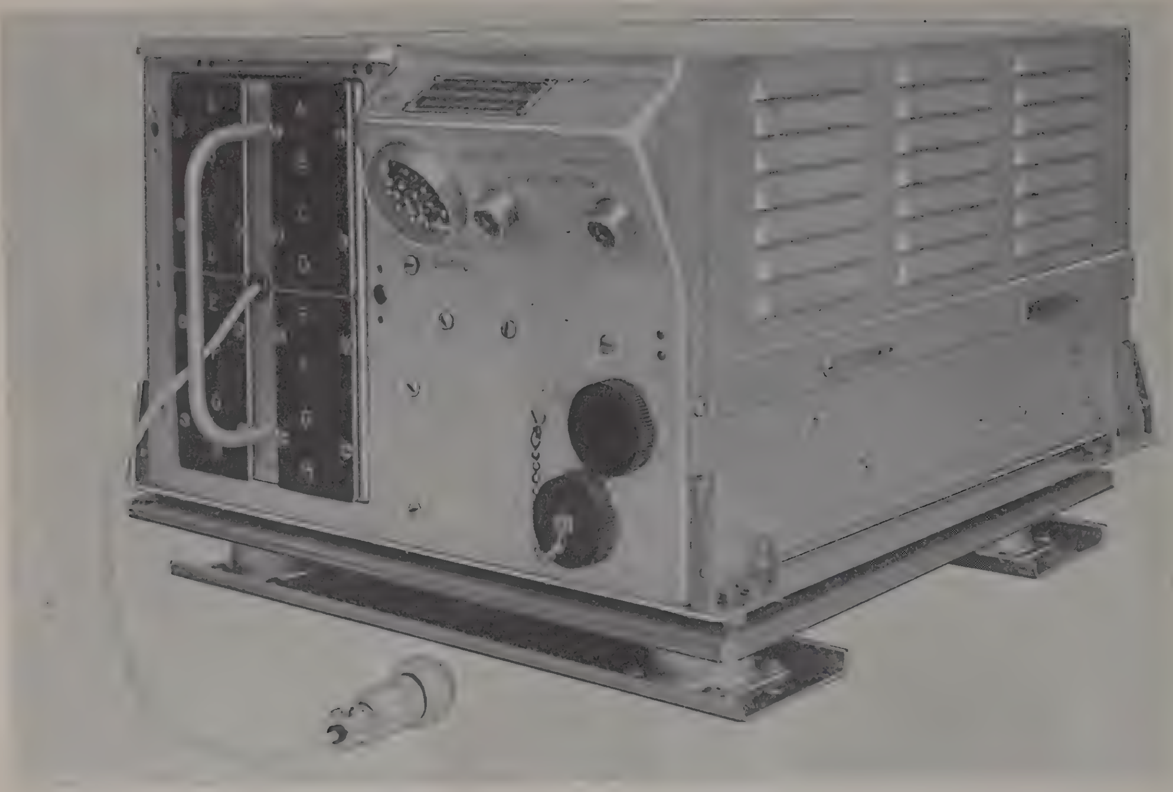


Figure 1-7. Radio Transmitter T-312/ARC-36, T-312A/ARC-36, or T-312B/ARC-36 Crystal Compartment Cover Removed

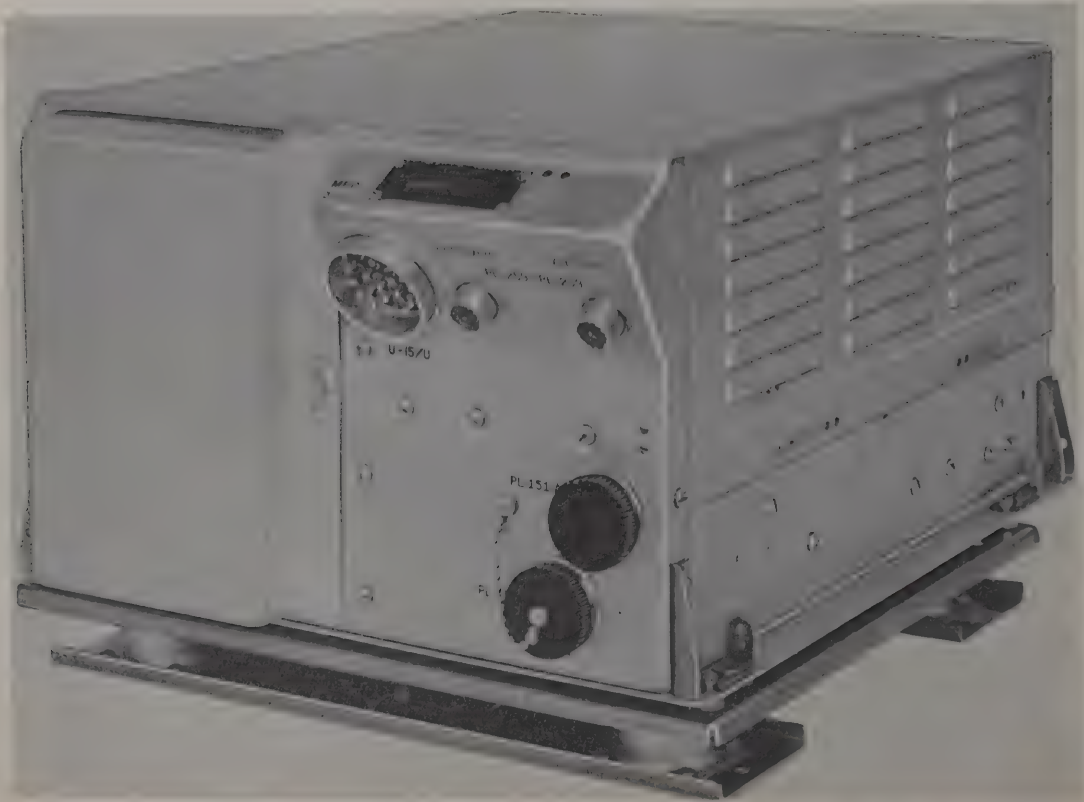


Figure 1-8. Radio Transmitter T-452/ARC-49 on Mounting Base MT-238C/ARC-3

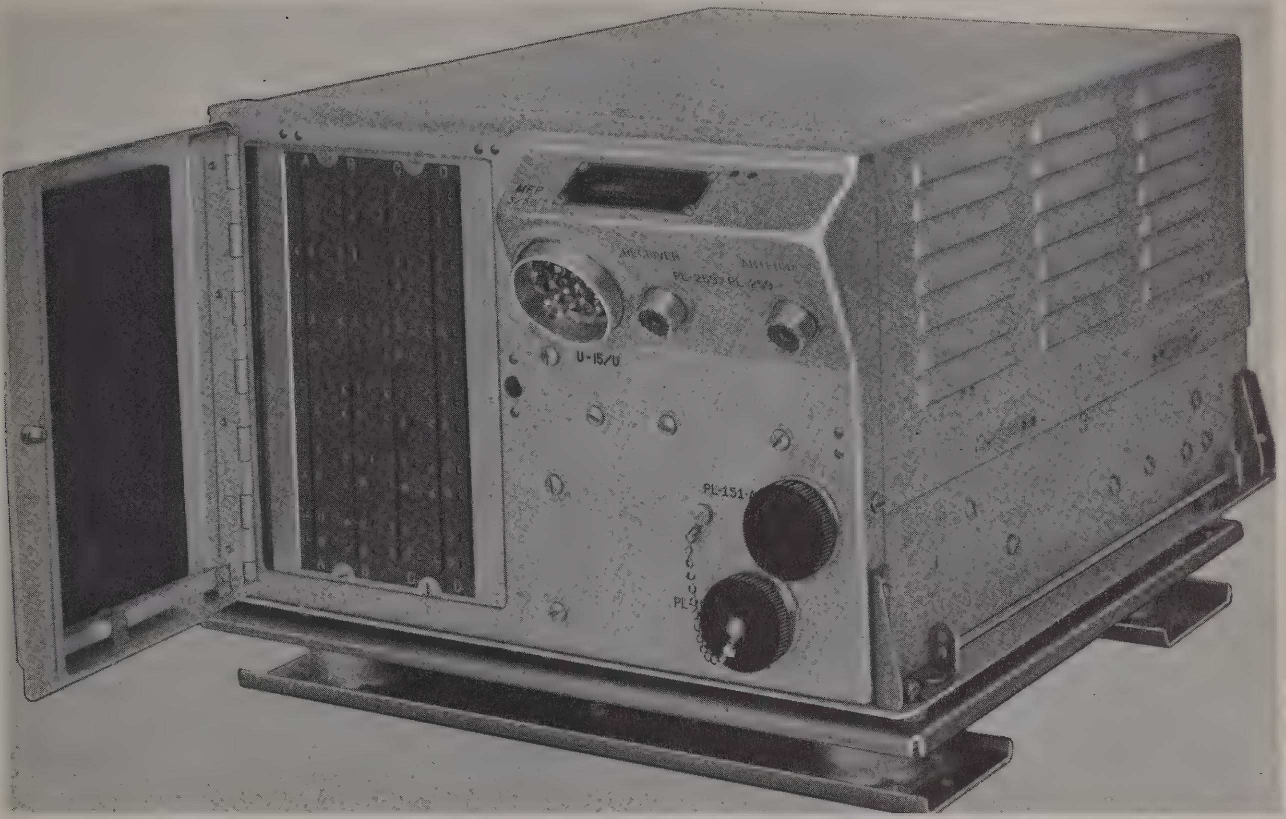


Figure 1-9. Radio Transmitter T-452/ARC-49—Crystal Compartment Door Open

ARC-36 it is first necessary to remove Crystal Socket Adapter UG-613A/U. Crystal Units DC-11-A, DC-16-A, DC-26-A, or CR-1A/AR may be used in Radio Set AN/ARC-3 or AN/ARC-36. Crystal Units CR-18/U are used in Radio Set AN/ARC-49 and a tool for removing the crystal units is attached to the crystal compartment door. To supply adequate ventilation there are louvers in the sides, and back of the cabinet. The bottom cover plate of the transmitter extends beyond each side of the cabinet approximately ⅝ inch and has a snapslide arrangement mounted thereon for securing the transmitter to the mounting base.

(3) Receptacles "U-15/U" and "PL-259" for making external connections to the transmitter are mounted on the front panel. The receptacle mounting surface is tilted outward and downward (see fig. 1-4) to provide drainage for the plugs and prevent the accumulation of excessive moisture under humid conditions. At the bottom of the front panel is a red covered receptacle marked "PL-152." This receptacle is used in making connection to Test Unit TS-178/ARM-1 for alignment purposes. Above and to the right of this is a receptacle with a black cover, marked "PL-151." This connection is for tone (MCW) transmission facilities which are controlled by the push-button switch on the control box.

Note

On Radio Transmitters T-67B/ARC-3, T-312B/ARC-36 or T-452/ARC-49 the receptacle "PL-151" is also used to connect the output of Intercommunication Set AN/AIC-10 into the speech amplifier circuit of the transmitter.

(4) Mounting Base MT-238C/ARC-3 (See fig. 1-11) is supplied for shock-mounting the AN/ARC-3, AN/ARC-36, or AN/ARC-49 transmitter. Mounting base MT-238/ARC-3 (See fig. 1-10), MT-238A/ARC-3, or MT-238B/ARC-3 may be used with the AN/ARC-3 or AN/ARC-36 transmitter but should not be used with the AN/ARC-49 transmitter.

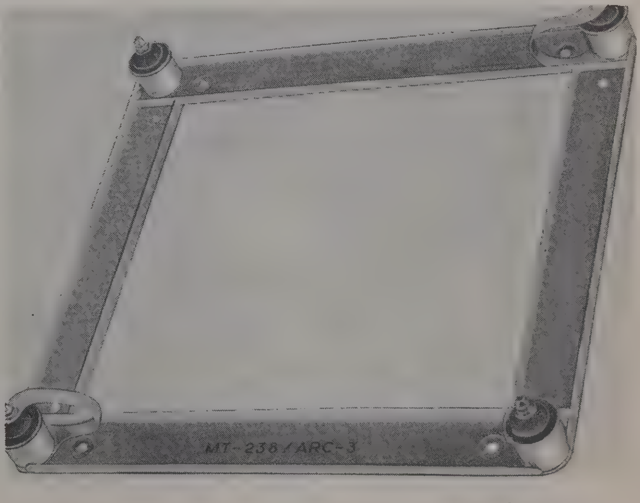


Figure 1-10. Mounting Base MT-238/ARC-3

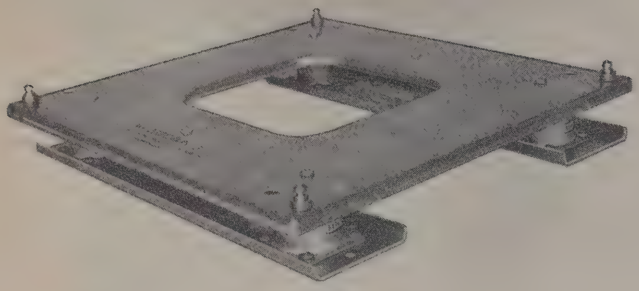


Figure 1-11. Mounting Base MT-238C/ARC-3

c. RADIO RECEIVER.

Note

> A general reference, such as "Radio Receiver," is made throughout this handbook when instructions are applicable to all versions.

(1) The radio receiver is a 17-tube, crystal-controlled superheterodyne. (See figs. 1-12 through 1-18.) Four dual-purpose tubes are used. This receiver operates on any preselected channel within the frequency range of the equipment. The various channels are automatically selected by an electrically operated channel-selecting mechanism when any one channel is selected on the control box or control panel at the remote control position. Selection of transmitter and receiver channels is simultaneous. Eight preselected channels are provided on Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3; sixteen channels are provided on Radio Receiver R-428/ARC-36, R-428A/ARC-36, or R-428B/ARC-36; and forty-eight channels are provided on Radio Receiver R-608/ARC-49.

Note

> Radio Receiver R-77/ARC-3 is identical to Radio Receiver R-428/ARC-36 except for change of crystal compartment door, nameplate, and the addition of Crystal Socket Adapter UG-614A/U, part of Modification Kit MX-1131A/ARC. The "A" and "B" versions are likewise identical except for the changes noted above.

(2) With the exception of its power supply, the entire receiver is housed in a metal cabinet. The top and bottom covers and the "wrap-around" position of the cabinet forming the two sides and back are removable. The crystals are housed in the compartment extending across the top of the front panel. (See fig. 1-12.) Located directly below this crystal compartment are eight thumbwheels calibrated in megacycles; these are for selecting the correct harmonic frequencies for each channel or groups of channels. To gain access to the crystal compartment and the thumbwheels, release the latch on the hinged metal cover on the front panel. (Note: The cover

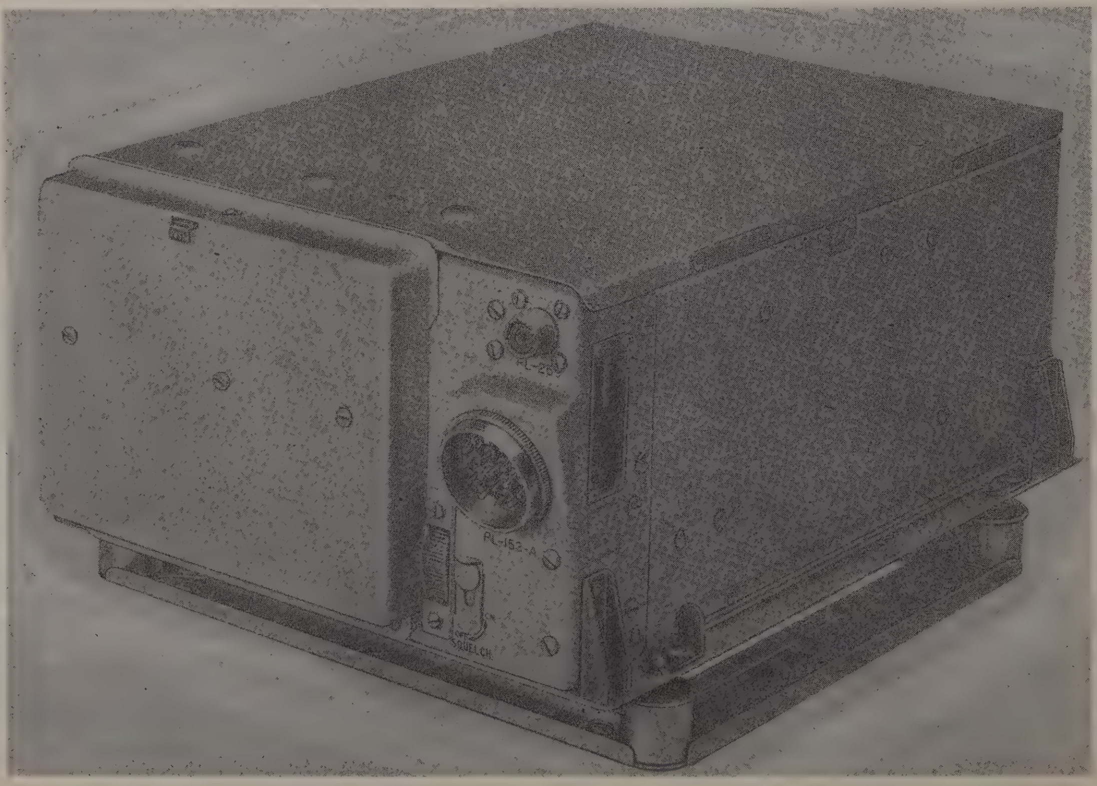


Figure 1-12. Radio Receiver R-77/ARC-3 on Mounting Base MT-237/ARC-3

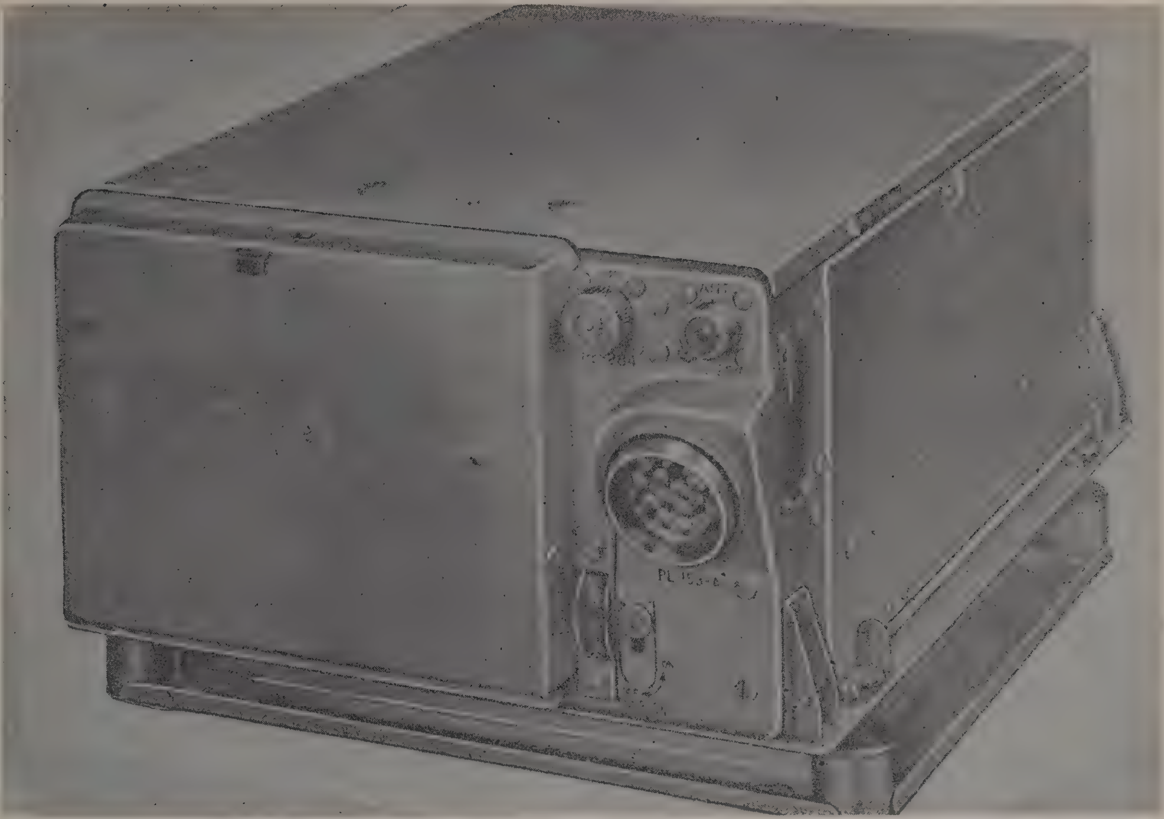


Figure 1-13. Radio Receiver R-77A/ARC-3 or R-77B/ARC-3 on Mounting Base MT-237A/ARC-3

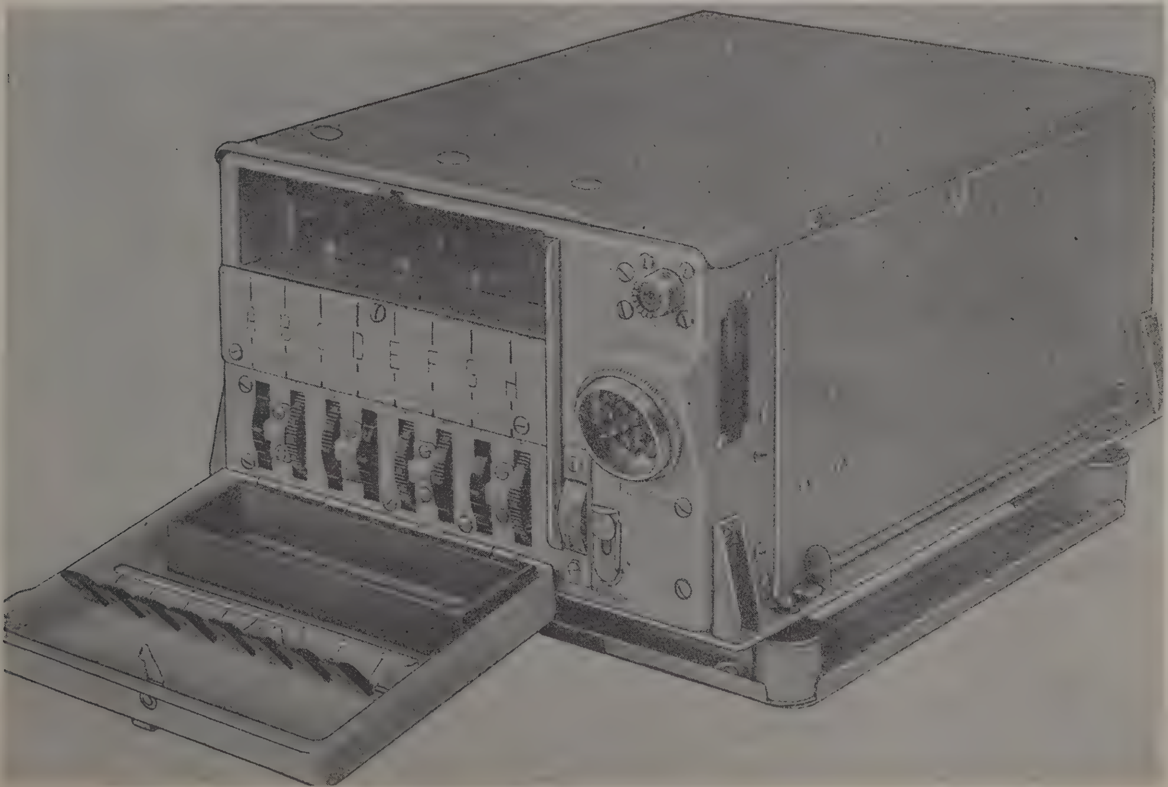


Figure 1-14. Radio Receiver R-77/ARC-3—Crystal Compartment Door Open

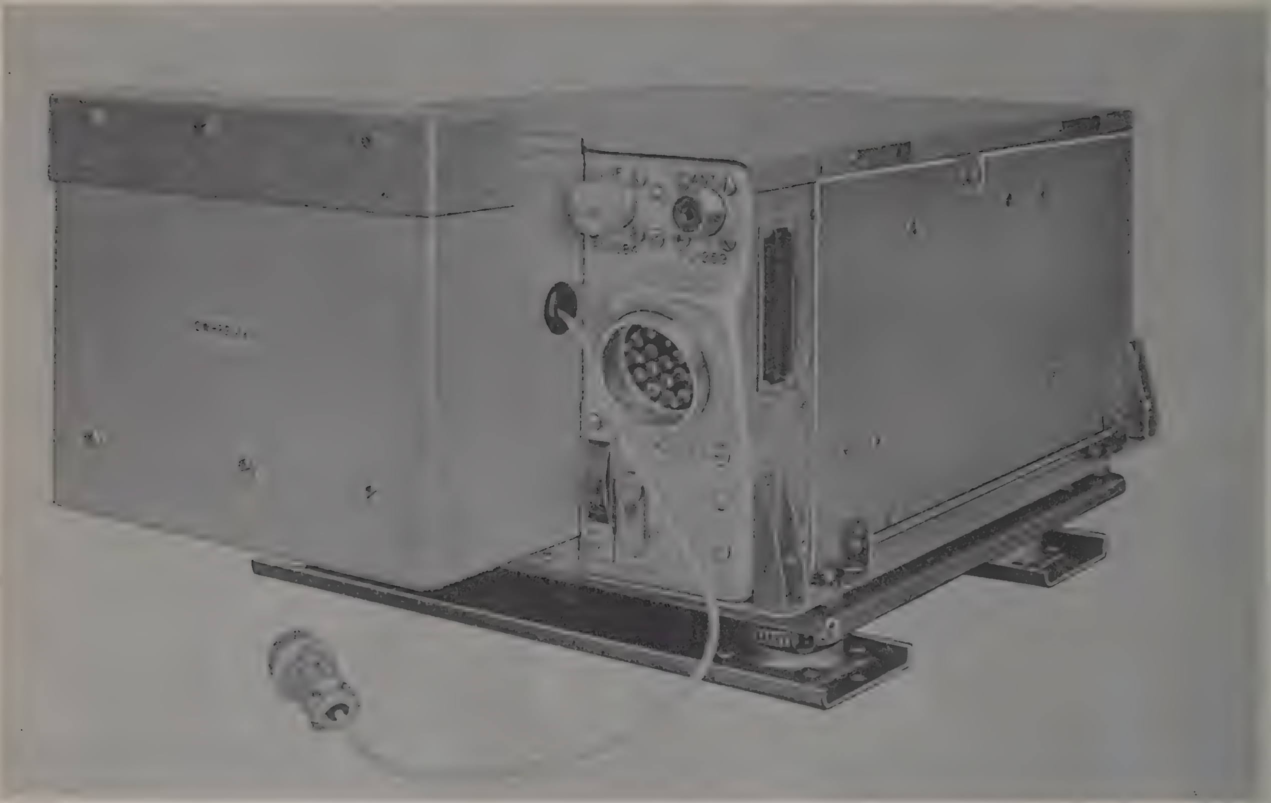


Figure 1-15. Radio Receiver R-428B/ARC-36 on Mounting Base MT-237C/ARC-3

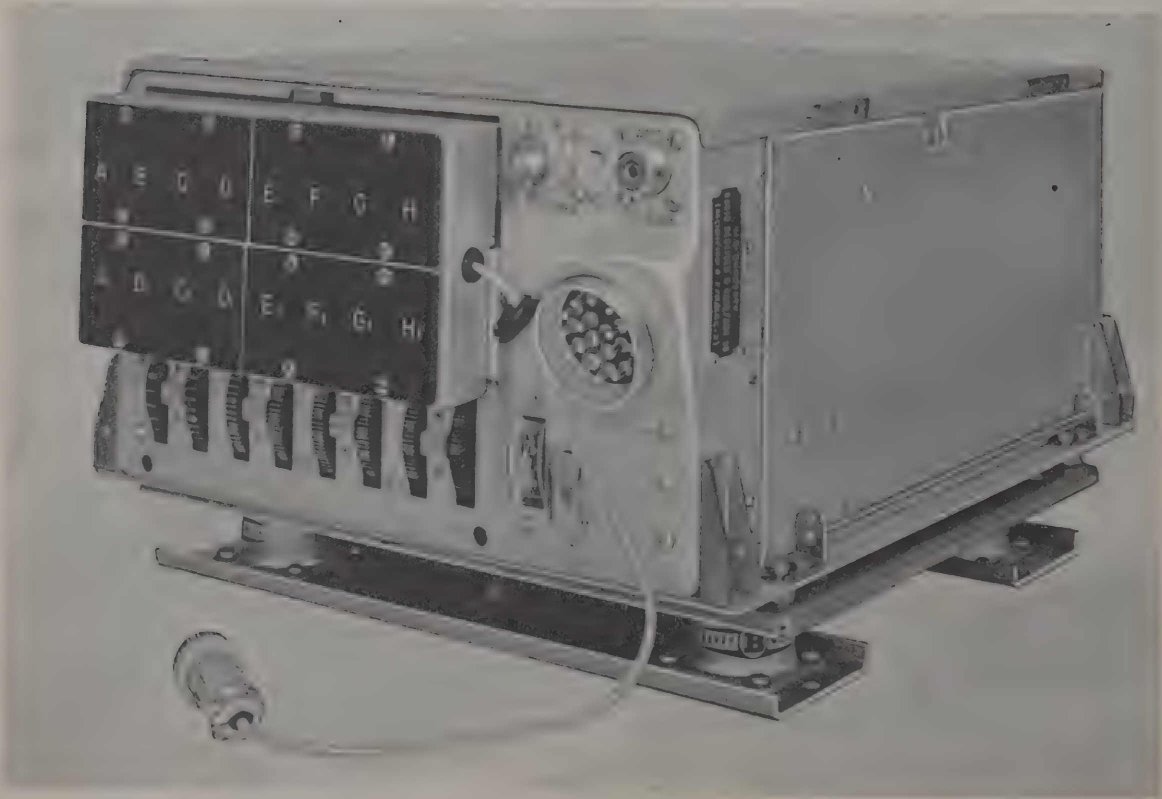

A
B
C
D
E
F
G
H
A
B
C
D
E
F
G
H

Figure 1-16. Radio Receiver R-428B/ARC-36—Crystal Compartment Cover Removed

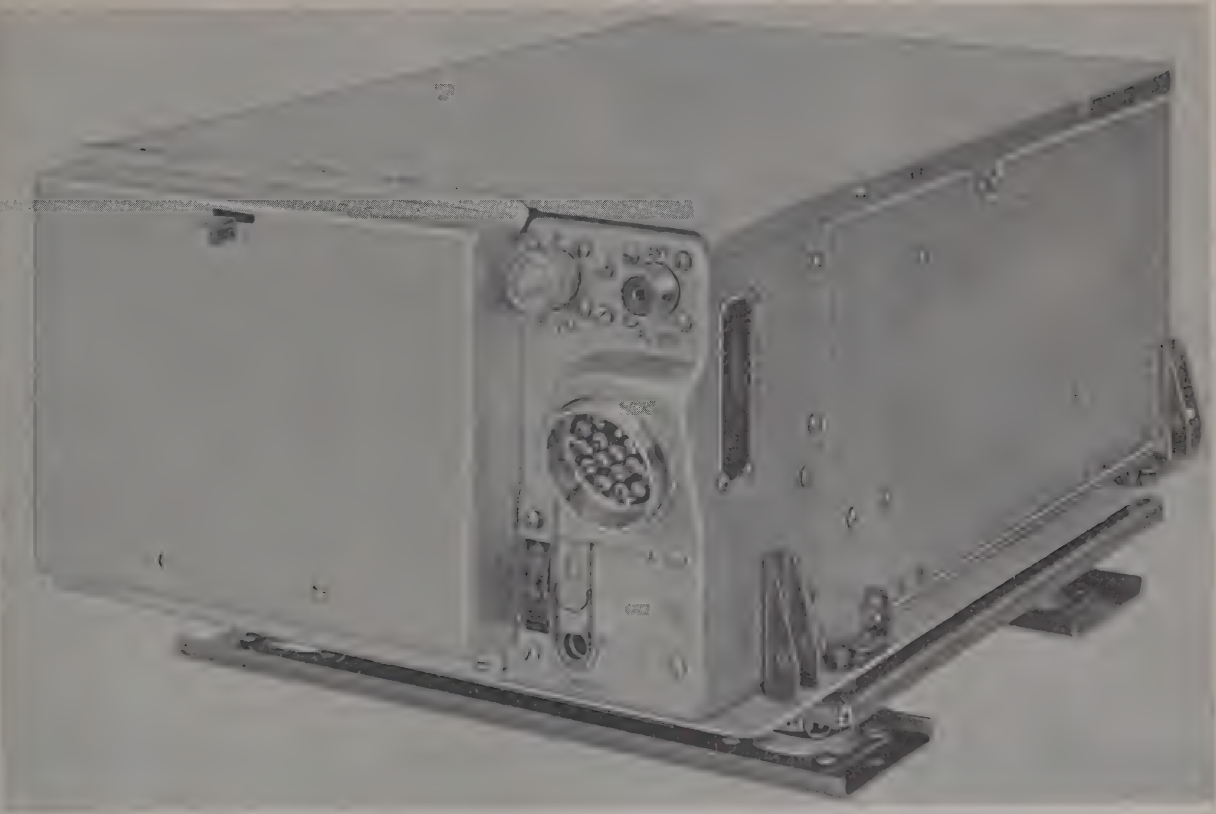


Figure 1-17. Radio Receiver R-608/ARC-49 on Mounting Base MT-237C/ARC-3

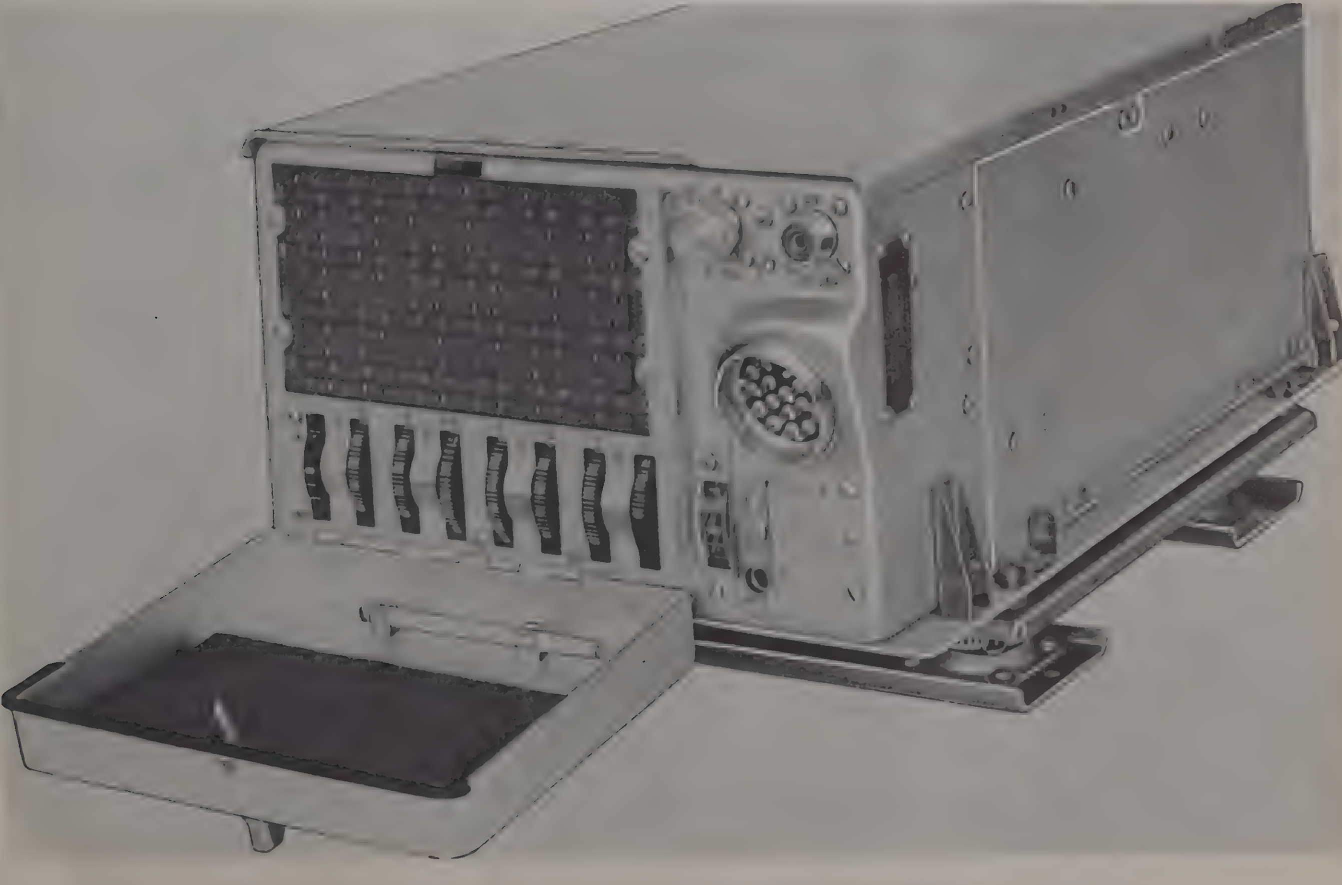


Figure 1-18. Radio Receiver R-608/ARC-49—Crystal Compartment Door Open

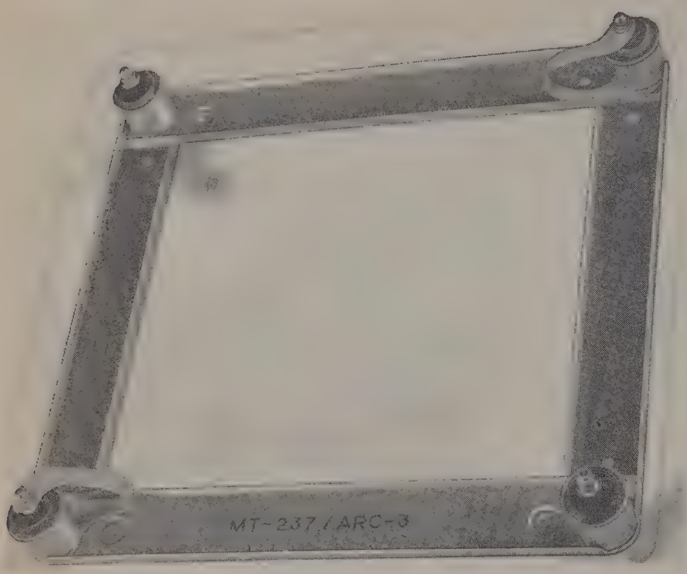


Figure 1-19. Mounting Base MT-237/ARC-3

on the AN/ARC-36 Receiver is not hinged and must be removed.) Sockets for installing crystals are mounted on the composition strip in this compartment. (See figs. 1-14, 1-16, and 1-18.) Crystal Units DC-11-A, DC-16-A, DC-26-A or CR-1A/AR may be used in Radio Set AN/ARC-3 or AN/ARC-36. Crystal Units CR-18/U are used in Radio Set AN/ARC-49 and a tool for removing the crystal unit is attached to the crystal compartment door. Directly below the crystal sockets in Radio Sets AN/ARC-3 and AN/ARC-36 is a metal plate, which when removed gives access to the crystal relay points for cleaning. On Radio Set AN/ARC-36 it is first necessary to remove Crystal Socket Adapter UG-614A/U. The bottom cover plate of the receiver extends beyond each side of the cabinet approximately ⅝ inch; mounted thereon is a snap-slide arrangement for securing the receiver to the mounting base.

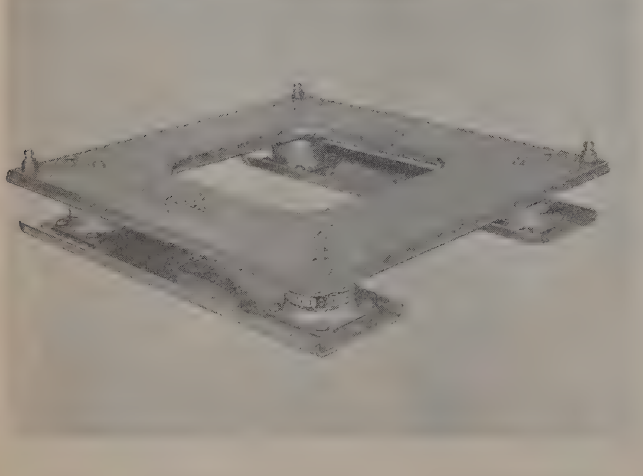


Figure 1-20. Mounting Base MT-237C/ARC-3

(3) On the front panel, just to the right of the eight calibrated thumbwheels, is a frequency indicator dial. (See fig. 1-14.) This dial indicates the channel frequency to which the receiver is tuned and is covered by a plastic window. Also located on the front panel, to the right of the frequency indicator dial, is a squelch adjustment.

(4) Receptacles for external connections to the receiver are mounted on the front panel. The receptacle marked "PL-153-A" is mounted on that portion of the panel which is tilted outward and downward to provide drainage for the plugs in preventing excessive accumulation of moisture under humid conditions (See fig. 1-12). The antenna receptacle "PL-259" is mounted directly above "PL-153-A" on the flat surface of the panel. Inside the set, attached to a bracket on the right side of the chassis, is another receptacle, marked "PL-152." This is used only for making connection to Test Unit TS-178/ARM-1 when aligning the receiver. Radio Receiver R-77A/ARC-3, R-77B/ARC-3, R-428A/ARC-36, R-428B/ARC-36, or R-608/ARC-49 has an IF receptacle (PL-284) located adjacent to the antenna receptacle which permits injection of a 12-megacycle signal from the guard channel converter.

(5) Mounting Base MT-237C/ARC-3 (See fig. 1-20) is supplied for shock-mounting the AN/ARC-3, AN/ARC-36, or AN/ARC-49 receiver. Mounting base MT-237/ARC-3, (See fig. 1-19), MT-237A/ARC-3, or MT-237B/ARC-3 may be used with the AN/ARC-3 or AN/ARC-36 receiver but should not be used with the AN/ARC-49 receiver.

d. POWER JUNCTION BOX J-68/ARC-3 or J-68A/ARC-3.

Note

Power Junction Box J-68A/ARC-3 is identical to the earlier model except for a change in fuse holder design. Either model may be used as part of Radio Set AN/ARC-3, AN/ARC-36, or AN/ARC-49.

(1) Power Junction Box J-68/ARC-3 or J-68A/ARC-3 performs two functions. (See figs. 1-21 and 1-22.) It serves as a mounting for Dynamotor Units DY-21/ARC-3 and DY-22/ARC-3 together with associated filters and fuses. These dynamotors supply power for the operation of the radio transmitter and radio receiver, respectively. The junction box, in addition, serves as the junction point for all interconnecting cables between the receiver, transmitter, power source, control box or panel, and control unit.

(2) Dynamotor Unit DY-21/ARC-3 is the larger of the two dynamotors located on top of the chassis. (See figs. 1-21 and 6-37.) It supplies power for the operation of the radio transmitter. Power connections are made through a three-pin socket on the bottom of the dynamotor base, which socket engages a plug on the chassis of the junction box when the dynamotor

unit is in position. Four snap-slide fasteners on the base of the dynamotor secure it to the chassis. Two extra holes in the base slip over guide pins on the chassis and eliminate the possibility of mounting the unit in a reversed position. The larger of the two metal cans contains a filter choke for this dynamotor.

(3) Dynamotor Unit DY-22/ARC-3 is the smaller of the two dynamotors located on top of the chassis (see figs. 1-21 and 6-37); it supplies power for the operation of the radio receiver. Power connections are provided by a three-pin socket, on the bottom of the dynamotor base, which engages a plug on the chassis of the junction box when the dynamotor unit is in position. Three snap-slide fasteners on the base of the dynamotor secure it to the chassis. The smaller of the two cans contains a filter choke for this dynamotor.

(4) Four receptacles, for all external connections, are mounted on the front apron of the chassis. This apron slopes inward to provide drainage for the plugs and prevent the excessive accumulation of moisture under humid conditions.

(5) The junction box chassis is a rectangular aluminum box with a removable bottom cover that extends $\frac{5}{8}$ inch beyond each side of the chassis. A snap-slide arrangement mounted thereon secures the junction box to the mounting base.

(6) Mounting Base MT-236B/ARC-3 (See fig. 1-24) is supplied for shock-mounting the power junction box. Mounting Base MT-236/ARC-3 (See fig. 1-23) or MT-236A/ARC-3 may be used interchangeably with MT-236B/ARC-3.

e. CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3.

Note

Control Box C-118/ARC-3 or C-118A/ARC-3 may be used as part of Radio Set AN/ARC-3 or AN/ARC-36. It cannot be used with Radio Set AN/ARC-49.

(1) Through the control box complete control and operation of Radio Set AN/ARC-3 from a remote point is possible. (For complete control of all sixteen channels of Radio Set AN/ARC-36 it is also necessary to use Mounting MT-798A/U.)

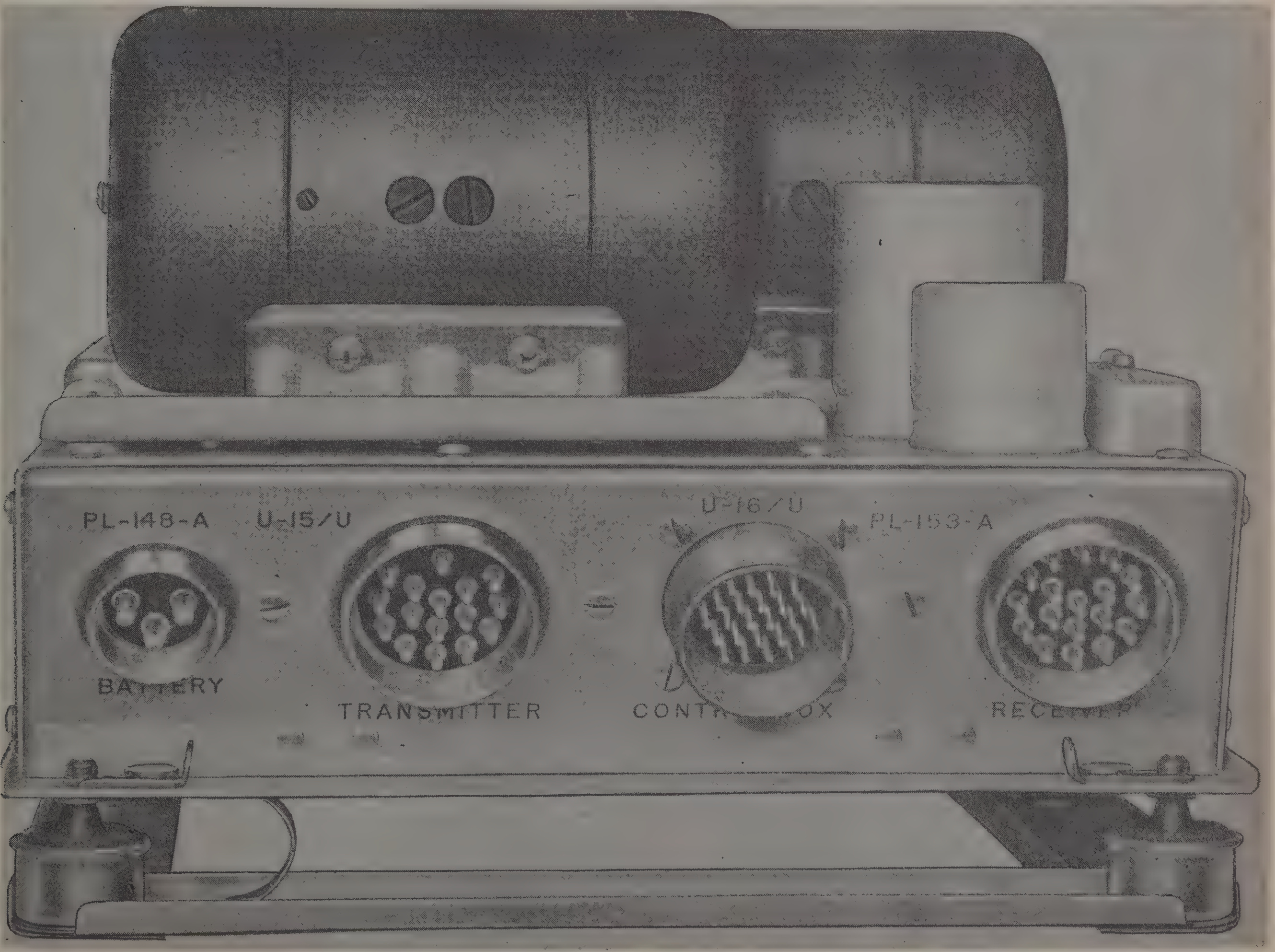


Figure 1-21. Power Junction Box J-68/ARC-3 on Mounting Base MT-236/ARC-3

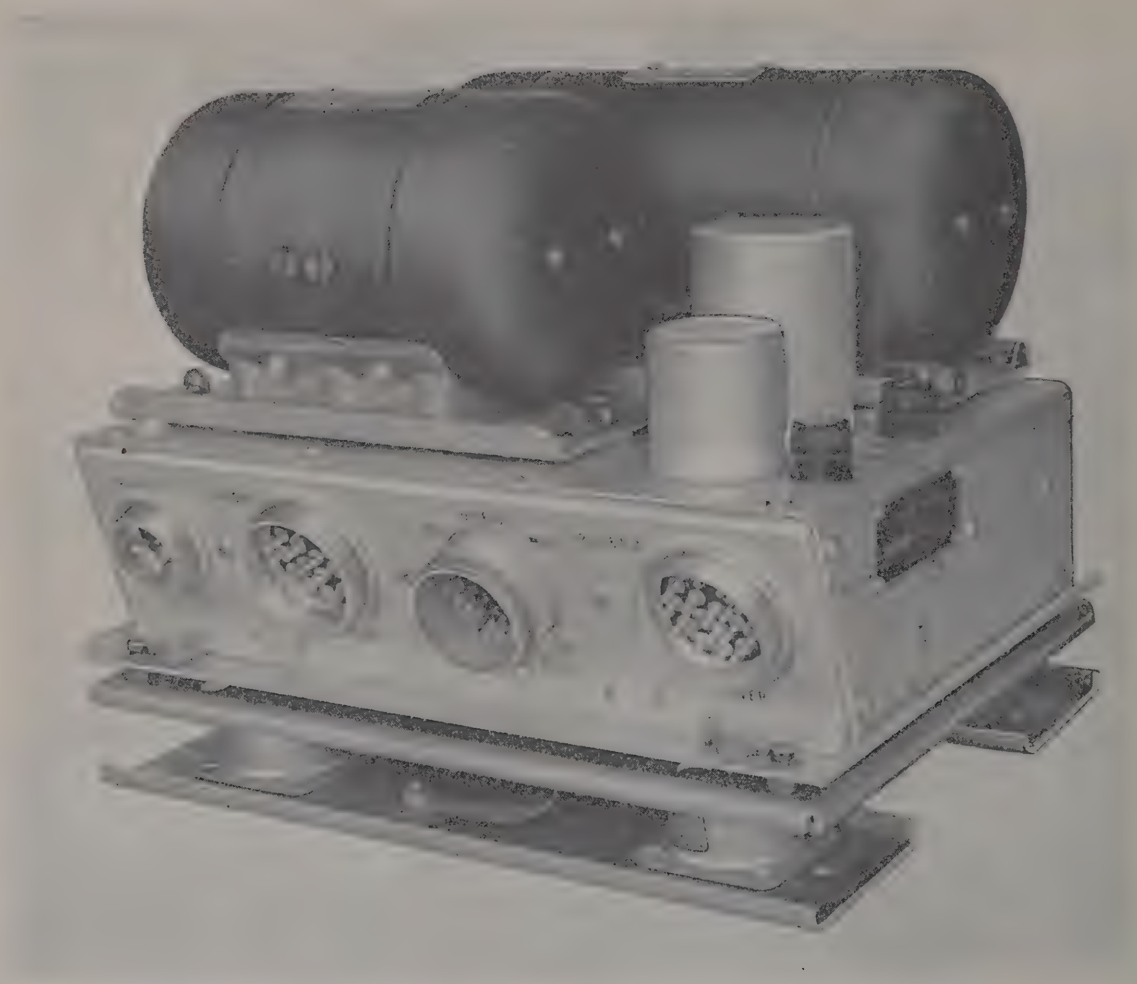


Figure 1-22. Power Junction Box J-68A/ARC-3 on Mounting Base MT-236B/ARC-3

(2) On the front panel arranged in two staggered rows are eight red push buttons, one black push button, and a small unidentified push button. *(This unidentified push button is omitted from Control Box C-118A/ARC-3. See fig. 1-25 for Control Box C-118/ARC-3 and fig. 1-28 for Control Box C-118A/ARC-3.)* The channel-selector (red) buttons are lettered "A" through "H." The black button is lettered "OFF." The small unidentified button *(omitted from Control Box C-118A/ARC-3)* is a lock for this "OFF" button. The latter cannot be depressed until the former is depressed, thereby preventing any accidental operation of the "OFF" button during flight.

(3) A receptacle for all external connections is mounted on the bottom end of the metal case. (See fig. 1-27.) Adjacent to this receptacle are a "MIC." and "TEL." jack and a "TONE" button.

(4) The components of the control box are mounted in a rectangular steel box, the side covers of which are removable. Two snap-slides on one side of the box are for securing it to Mounting FT-240-A, which will be installed on the aircraft structure. (See figs. 1-27 and 1-29.)

f. CONTROL UNIT C-197/ARC-3.

Note

Control Unit C-197/ARC-3 may be used as part of Radio Set AN/ARC-3 or AN/ARC-36. It

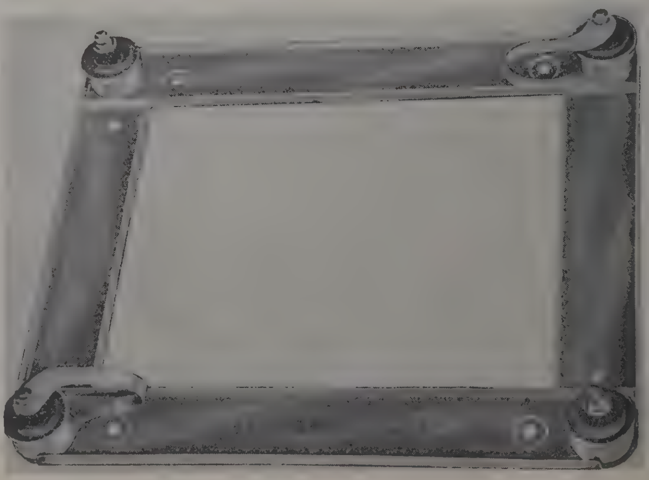


Figure 1-23. Mounting Base MT-236/ARC-3

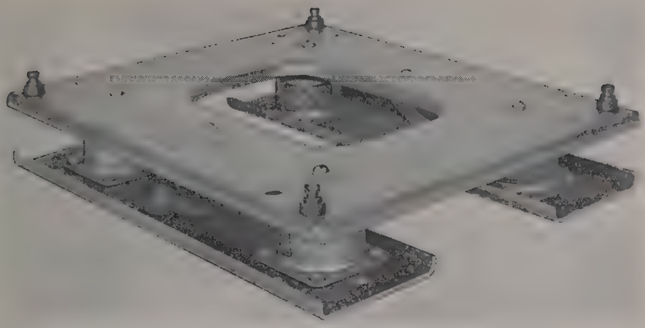


Figure 1-24. Mounting Base MT-236B/ARC-3

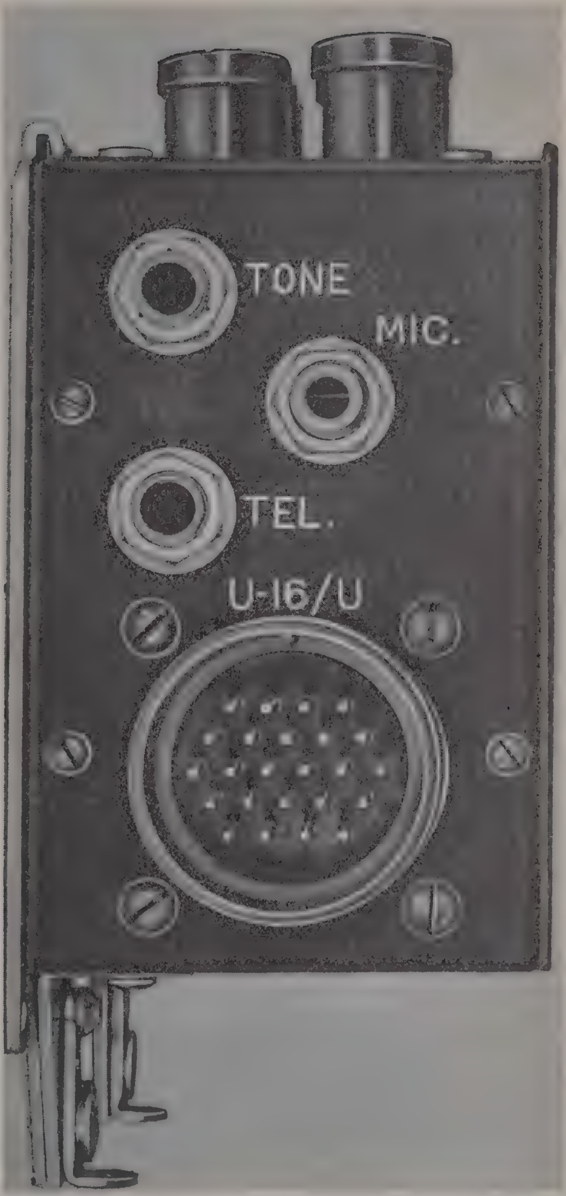


Figure 1-26. Control Box C-118/ARC-3 or C-118A/ARC-3—Bottom View

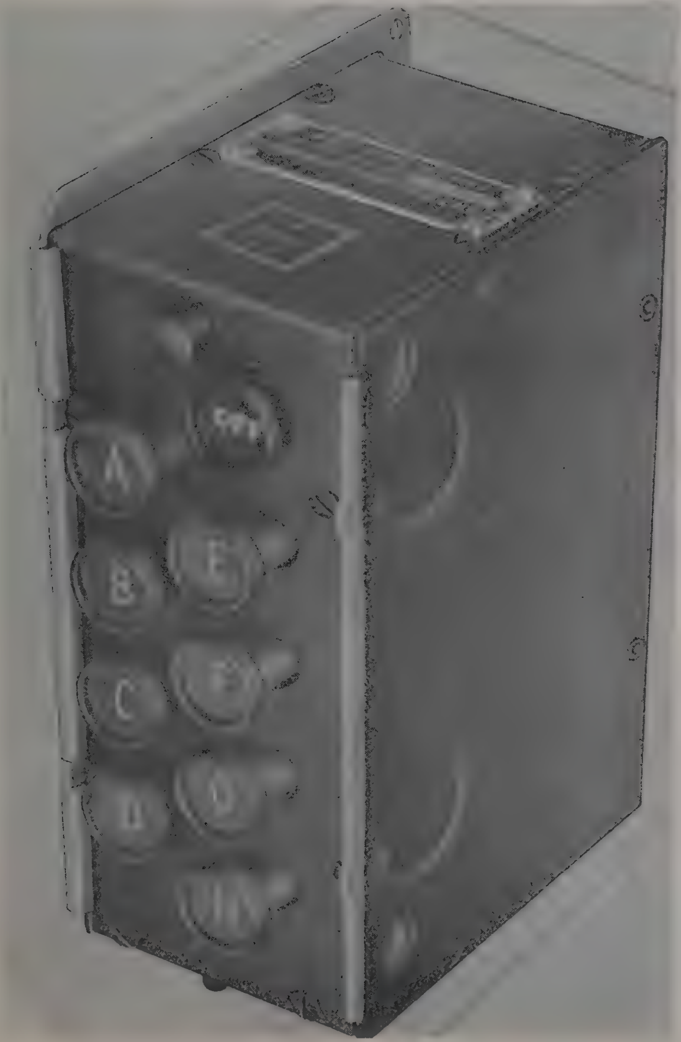


Figure 1-25. Control Box C-118/ARC-3

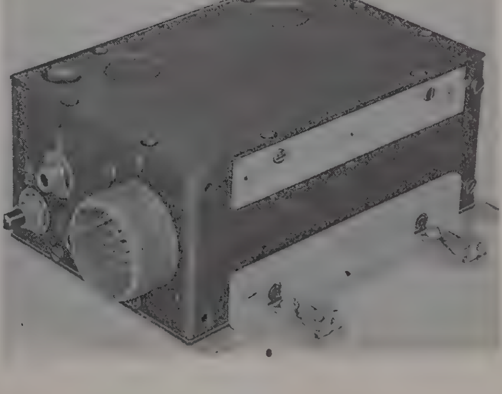


Figure 1-27. Control Box C-118/ARC-3 or C-118A/ARC-3—Rear-Diagonal View

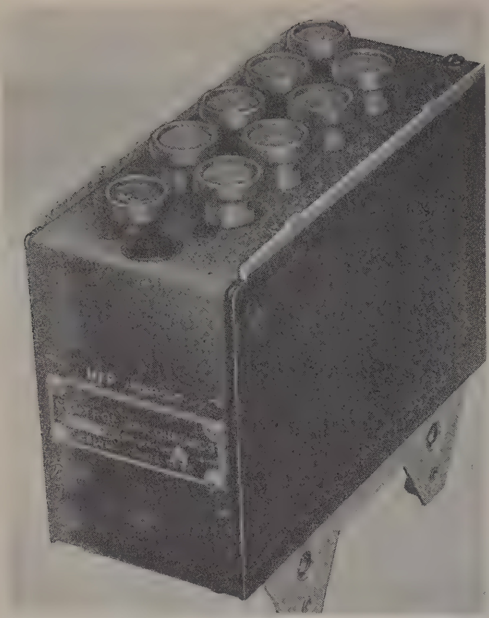


Figure 1-28. Control Box C-118A/ARC-3

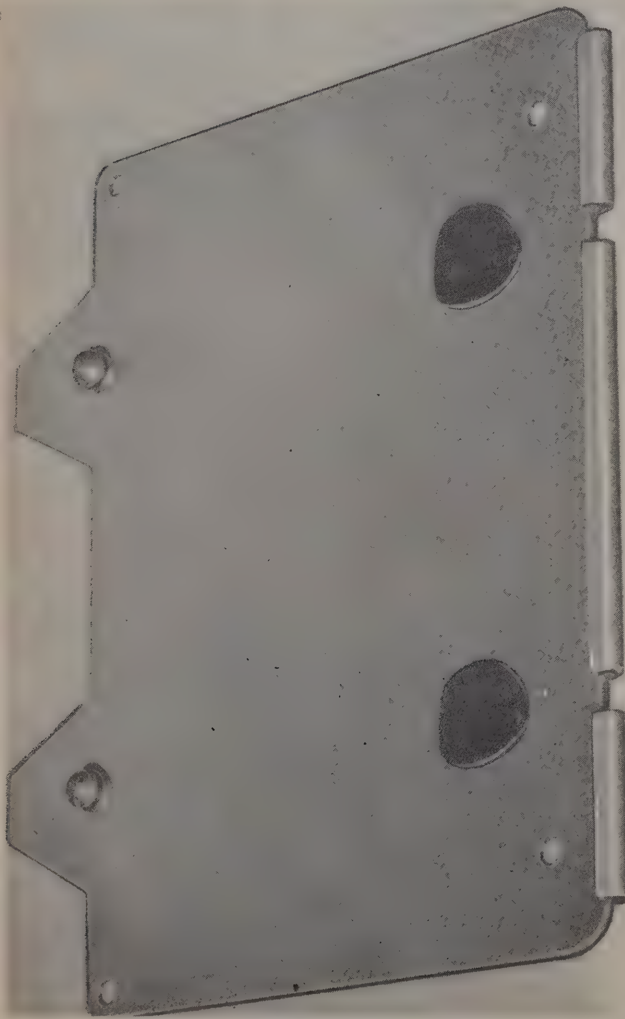


Figure 1-29. Mounting FT-240-A

is not used on Radio Set AN/ARC-49 or when Control Panel C-404/A or C-404A/A is used in place of Control Box C-118/ARC-3 or C-118A/ARC-3.

(1) This unit is used only in fighter aircraft installations. It controls the volume of the received signal in the pilot's headset and is housed in a small metal box. A single control is located on the front, whereas three screw-type terminals for external connections are located on the back. (See fig. 1-30.)

g. ANTENNA MAST AN-104-B. — This antenna mast consists of a hardwood oval-shaped rib approximately 31 inches overall in length. (See fig. 1-31.) The antenna element and transmission line are housed in a drilled cavity that extends up through the center. A Socket SO-259 at the base of the mast is for making connection to the radio equipment. The upper portion of the mast is covered by a metal sheath which extends to within 8¼ inches of the base of the mast. (See figs. 1-31, 8-14 and 8-15.)

h. CONTROL PANEL C-404/A OR C-404A/A.

(1) This unit is installed with Radio Set AN/ARC-3 or AN/ARC-36 in lieu of Control Box C-118/ARC-3 or C-118A/ARC-3 in certain types of aircraft. The Control Panel is electrically but not mechanically interchangeable with the control box. (See figs. 1-32 and 1-34.)

Note

Control Panel C-404 does not include the plastic lighting plate or the two lamps that are employed on the C-404A/A.

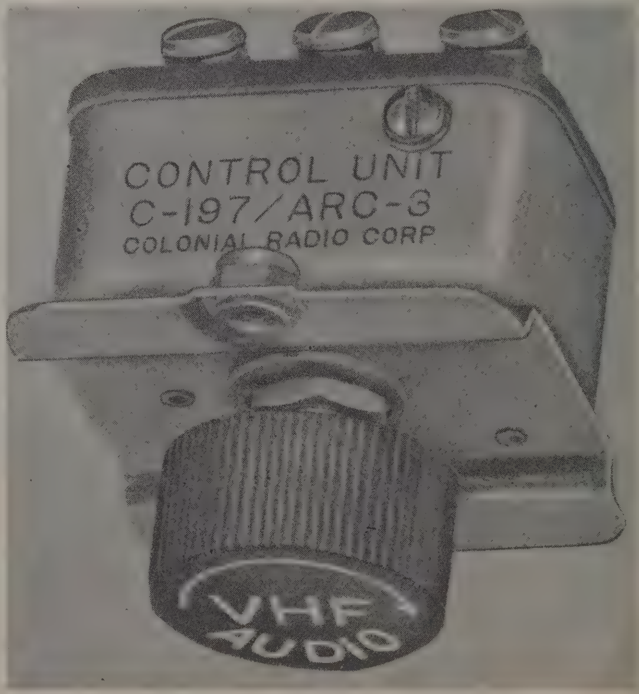


Figure 1-30. Control Unit C-197/ARC-3

(2) The controls from left-to-right are: the channel selector switch, D/F tone switch, volume control, and the ON-OFF switch. Two cables extend out from the control panel and connect to a terminal board exterior to the equipment. All the connections to the control panel are made through these cables. (See figs. 1-32 and 1-34.)

Note

> A small quantity of experimental models designated Control Panel C-404(XA)/A were installed in experimental and early productions of new types of aircraft. (See fig. 1-33.) The C-404(XA)/A is mechanically and electrically interchangeable with the C-404/A.

i. CONTROL, RADIO SET C-1400/ARC-49.

(1) This Unit provides complete remote control and operation of Radio Set AN/ARC-49.

(2) On the front panel arranged from left to right are the volume control, crystal selector switch, tone switch, Channel selector switch and the ON-OFF switch. Two receptacles, PL-153-A and U-15/U, are mounted on the back of the control panel. These receptacles connect to the Power Junction Box J-68/ARC-3 or J-68A/ARC-3 and Radio Receiver R-608/ARC-49 respectively. The panel is mounted in the aircraft by means of four Dzus fasteners. (See figs. 1-35 and 1-36.)

5. INTERCHANGEABILITY OF MAJOR ASSEMBLIES

a. No major assembly of Radio Set AN/ARC-3, AN/ARC-36, or AN/ARC-49 can be interchanged with any other major assembly of the same equipment for emergency operation. Defective units must be repaired or replaced with exact duplicates.

b. The AN/ARC-3 receiver is similar to the AN/

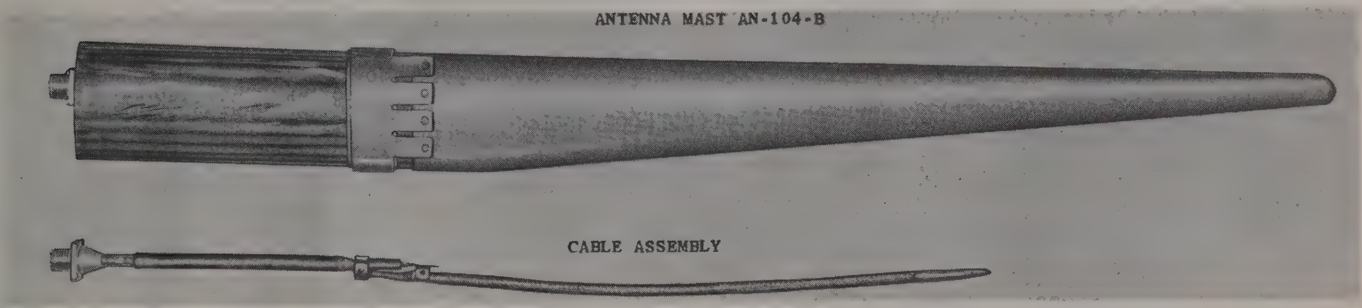

ANTENNA MAST AN-104-B
CABLE ASSEMBLY

Figure 1-31. Antenna Mast AN-104-B

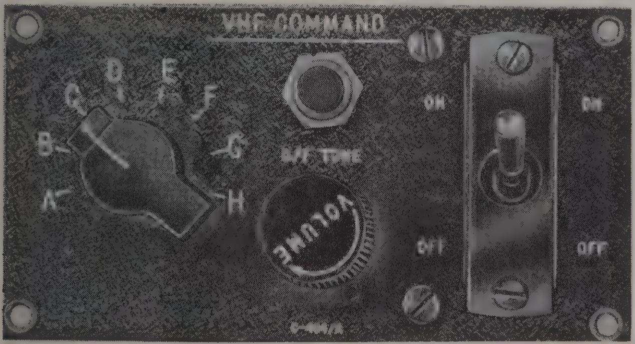

VHF COMMAND
A
B
C
D
E
F
G
H
D/F TONE
VOLUME
ON
ON
OFF
OFF
C-404/A

Figure 1-32. Control Panel C-404/A

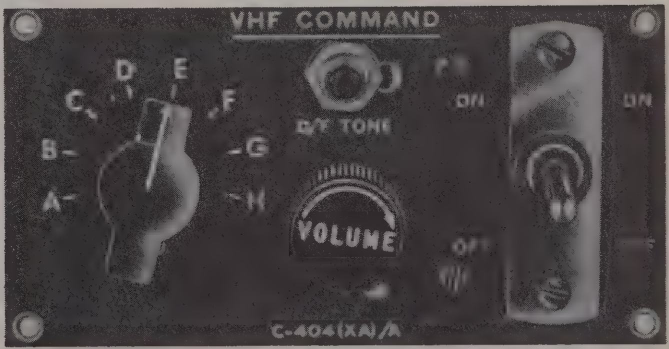

VHF COMMAND
A
B
C
D
E
F
G
H
D/F TONE
VOLUME
ON
ON
OFF
C-404(XA)/A

Figure 1-33. Control Panel C-404(XA)/A

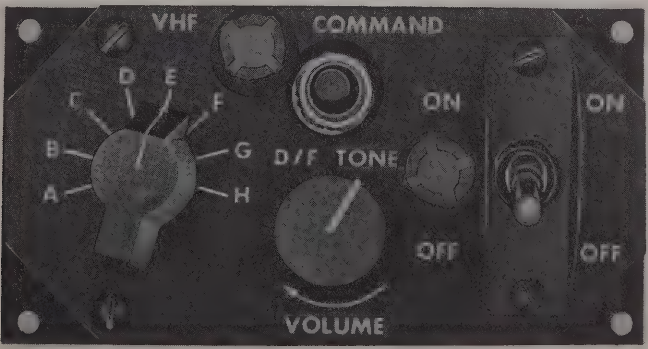

VHF
COMMAND
A
B
C
D
E
F
G
H
D/F TONE
ON
ON
OFF
OFF
VOLUME

Figure 1-34. Control Panel C-404A/A

ARC-36 receiver and can be interchanged. The major difference being that the addition of Crystal Socket Adapter UG-614A/U converts an AN/ARC-3 receiver to an AN/ARC-36 receiver. Similarly the AN/ARC-3 and the AN/ARC-36 transmitter can be interchanged. The major difference is the addition of Crystal Socket Adapter UG-613A/U.

c. The power junction box with dynamotors is similar for Radio Sets AN/ARC-3, AN/ARC-36, and AN/ARC-49 and is interchangeable.

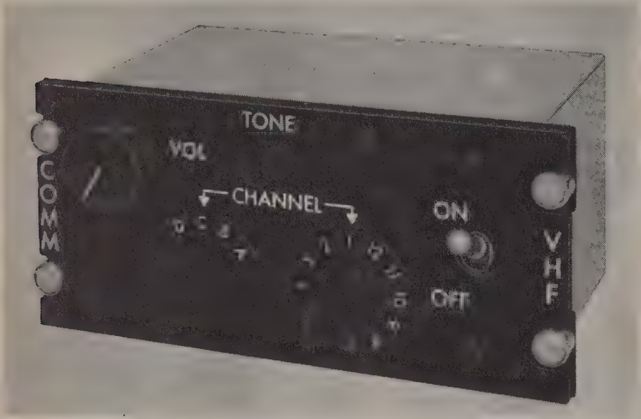


Figure 1-35. Control, Radio Set C-1400/ARC-49

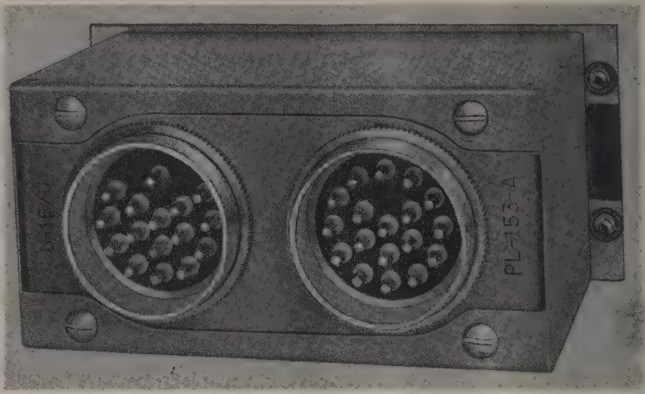


Figure 1-36. Control, Radio Set C-1400/ARC-49 Rear View

SECTION II

INSTALLATION AND ADJUSTMENT

CAUTION

1. WHEN A RADIO SET HAS BEEN TURNED OFF DO NOT TURN ON FOR ONE MINUTE.
2. DO NOT RELEASE BUTTONS OR TURN POWER "OFF" WHILE SET IS CYCLING.

1. INSTALLATION.

a. PRELIMINARY PROCEDURE.

(1) UNPACKING.—Remove all assemblies of Radio Set AN/ARC-3, AN/ARC-36, or AN/ARC-49 from their respective cartons. Open cartons carefully to avoid damaging the equipment. Check each assembly against the list of equipment supplied in paragraph 2 section I to make certain that all assemblies were received.

(2) BENCH TEST.—Before installing the equipment in the plane, assemble all of the units on a test bench and interconnect them as described in paragraph 1*c*, this section. Connect the equipment to a 28-volt DC power source. Use the cords provided with Radio Test Unit AN/ARM-1 or cords which have been fabricated as instructed in paragraph 1*c*, this section.

(*a*) RADIO TRANSMITTER T-67/ARC-3, T-67A/ARC-3, T-67B/ARC-3, T-312/ARC-36, T-312A/ARC-36, T-312B/ARC-36, or T-452/ARC-49.

1. Connect Phantom Transmitter Antenna TS-78/U to the "ANTENNA" receptacle on the front panel of the transmitter.

2. Connect Microphone T-17 to the "MIC" jack on the Control Box C-118/ARC-3 or C-118A/ARC-3. If using Control Panel C-404/A or C-404A/A, or Control, Radio Set C-1400/ARC-49 connect to the interphone system.

3. Connect Test Unit TS-178/ARM-1 to the "PL-152" receptacle on the front of the transmitter. The cable between the junction box (dynamotor unit) and receiver is not needed for this test; however, it may be left connected.

4. Insert crystal units in accordance with the following chart.

AN/ARC-3 or AN/ARC-36	AN/ARC-49	
Channels	*Channels*	*Frequencies*
"A"	"D-10"	5555.55 kc
"B"	"D-11"	6944.00 kc
"C"	"D-12"	8458.00 kc

Other crystal units preferably of the frequencies to be used in the aircraft, should be inserted in the other channels, unless they are supplied with the Unit.

5. Select Channel "A" (see Par. 2a. Section III) if using AN/ARC-3 or AN/ARC-36 equipment and Channel "D-10" if using AN/ARC-49 equipment. If the tuning motor does not stop after one minute, turn the switch of TEST UNIT TS-178/ARM-1 to the "B" position. If no voltage is indicated, check the transmitter HV fuse on POWER JUNCTION BOX J-68/ARC-3 or J-68A/ARC-3. The tuning motor, in RADIO TRANSMITTER T-67/ARC-3 or T-312/ARC-36 with modification M-3, and in RADIO TRANSMITTER T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49, will not operate during the warm-up period of the transmitter, but will cycle once when this period is completed. If the tuning motor does not cycle after one minute the voltage checks indicated above should be made. If the motor stops but no power output is obtained, as indicated by the lamps of Phantom Antenna TS-78/U, the crystal unit and vacuum tubes must be checked. All tubes except JAN-832-A may be replaced without realigning the set. Instructions for an alignment check after replacing a JAN-832-A tube are printed on the inside of the transmitter cover.

Note

> To insure proper operation when the cover of the transmitter is removed, motor control switch S-102 must be depressed while selecting channels. This switch is attached to the side of the crystal compartment.

6. Check the modulation of the transmitter by noting an increase in the brightness of the lamps in Phantom Antenna TS-78/U when speaking into the microphone.

7. The readings as observed on Test Unit TS-178/ARM-1 should be within the following limits when the push-to-talk button of the microphone is depressed.

Position	*Limits*
"Osc."	More than 20
"1"	More than 25
"2"	More than 25
"3"	More than 25
"4 Trans."	40 to 85

If the readings on positions "1", "2", "3", and "4 Trans." are not within these limits, a change of tubes or realignment is indicated. Check to see that the power source is between 27 and 29 volts before replacing tubes or attempting to realign the set. A reading of 54 to 58 on the "A" scale of Test Unit TS-178/ARM-1 indicates a satisfactory voltage.

8. Check channels "B" and "C" on Radio Transmitter AN/ARC-3 or AN/ARC-36 and channels "D-11" and "D-12" on Radio Transmitter AN/ARC-49. Check the meter readings in the positions indicated in the preceding sub-paragraph. Check for power output on the remaining channels. The antenna loading is adjusted at the factory for an average value that will give the best results, irrespective of the frequency used. *Do not change this adjustment.*

9. Absence of power output on one or two channels is usually caused by defective crystal units or dirty relay contacts. Phantom Antenna TS-78/U indicates only relative power output at a particular frequency. More or less light, as indicated by the lamps on this antenna, on another frequency does not necessarily mean a change in power output.

(*b*) RADIO RECEIVER R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36, R-428B/ARC-3 or R-608/ARC-49.

1. Connect Test Unit TS-178/ARM-1 to "PL-152," which is located inside the receiver. To reach this receptacle remove the top cover.

2. Insert crystal units as follows:

AN/ARC-3 or AN/ARC-36	*AN/ARC-49*	*Crystal Frequency*	*Thumbwheel*
Channel	*Channel*		
"E"	"A-12"	8727.00	116.7 Mc
"F"	"B-12"	8000.00	100.0 Mc
"G"	"C-12"	8100.00	133.5 Mc
"H"	"D-12"	(See sub-par. 8)	156.0 Mc

3. Set the remaining channels on frequencies to be used in the aircraft.

4. Select channel "E" (See Par. 2a Section III) on the AN/ARC-3 or AN/ARC-36 Radio Receiver and channel "A-12" on the AN/ARC-49 Radio Receiver. If the tuning motor does not stop in about one minute, turn the switch of Test Unit TS-178/ARM-1 to the "B" position. If no voltage is indicated, check the receiver high voltage fuse on Power Junction Box J-68/ARC-3 or J-68A/ARC-3. The tuning motor in Radio Receiver R-77A/ARC-3 or R-428A/ARC-36 with modification M-2, R-77B/ARC-3, R-428B/ARC-36 or R-608/ARC-49 will not operate during the warm-up period of the receiver but will cycle once when this period is completed. If the tuning motor does not cycle after one minute the voltage checks indicated above should be made. The frequency indicating dial at the extreme right of the receiver should stop at 116.7 megacycles ± 1%. If the word "end" appears select another channel and immediately reset to the original channel. Switch S-203 must be depressed during shifting operations. If the word "end" appears this time check the crystal unit and tubes. No alignment adjustments are necessary after replacing any of the receiver tubes.

Note

> To insure proper operation when the cover of the receiver is removed, switch S-203 must be depressed while selecting channels. Hold it closed until the tuning motor stops running. This switch is located on a bracket at the extreme right inside the receiver.

5. Select channel "E" on AN/ARC-3 or AN/ARC-36 Radio Receivers or channel "A-12" on AN/ARC-49 Radio Receivers. The meter reading in the "osc" position of the Test Unit TS-178/ARM-1 should be between 40 and 60. The meter reading should be at least 40 in switch position "1", and at least 24 in position "3".

6. Select channel "F" on AN/ARC-3 or AN/ARC-36 Radio Receivers or channel "B-12" on AN/ARC-49 Radio Receivers. The meter reading should be at least 8 in the "osc" position; at least 56 in position "1", and at least 22 in position "3".

7. Select channel "G" on AN/ARC-3 or AN/ARC-36 Radio Receivers or channel "C-12" on AN/ARC-49 Radio Receivers. The meter reading should be at least 8 in the "osc" position; at least 69 in position "1" and at least 26 in position "3".

8. Change the 8000 kilocycle crystal from channel "F" to channel "H" on AN/ARC-3 or AN/ARC-36 Radio Receivers, or from channel "B-12" to channel "D-12" on the AN/ARC-49 Radio Receiver. Select this channel. The meter reading should be more than 22 in position "3".

9. Remove the plug from the "PL-152" receptacle and replace the receiver cover. Set the "SQUELCH" control on the receiver front panel at the "OFF" position.

10. Check the IF and audio stages by listening in the headset for a hiss as the headset plug is inserted in the "TEL." jack on the control box. This indicates that the receiver is operating. As a further check, the antenna connection may be tapped gently with a metallic object. If a click is heard in the headset, proper operation of the receiver is indicated.

11. Check the remaining channels to see that the receiver tunes to the frequency determined by the crystal unit and the proper setting of the thumbwheel.

12. If a Signal Generator I-130A (part of Test Equipment IE-19-A) is available, it can be used to compare a questionable receiver with one known to be in good operating condition. Use a transmitter crystal to control the frequency of this signal generator. Entirely acceptable receivers may have a variation in sensitivity for a given frequency of three to one, from receiver to receiver. Bear this fact in mind in order to avoid rejecting usable receivers.

13. Burnish questionable relay contacts with the tool provided in Radio Test Set AN/ARM-1. Never burnish relay contacts with abrasive material such as a file.

WARNING

> Always turn off *all* power before attempting to burnish relay contacts. The high voltage can cause serious injury to personnel.

(*c*) POWER JUNCTION BOX J-68/ARC-3 or J-68A/ARC-3, CONTROL BOX C-118/ARC-3 or C-118A/ARC-3, CONTROL PANEL C-404/A or C-404A/A and CONTROL, RADIO SET C-1400/ARC-49. —Bench tests for these units including dynamotors may be adequately accomplished by substituting for these parts, one at a time, the proper items of Radio Test Set AN/ARM-1, or equipment otherwise supplied. Use a receiver and transmitter known to be in good operating condition.

(*d*) CONTROL UNIT C-197/ARC-3. — No bench test for this unit is necessary. If for any reason faulty operation is suspected, it can be checked with an ohmmeter.

(*e*) ANTENNA MAST AN-104-B.

1. Using a short length of coaxial transmission line, connect the antenna mast to the radio transmitter.

2. Place the transmitter in operation and check to see that a voltage exists between the metal sheath of the mast and the ground connection. A 28-volt lamp (Lamp LM-38), which is a part of Phantom Transmitter Antenna TS-78/U, may be used for this purpose. If a glow in the lamp is observed, it can be assumed the antenna operation is satisfactory. If necessary, scrape paint away from a small area of the sheath to obtain a good contact.

(*f*) MOUNTING MT-798A/U—No bench test for this unit is necessary. Operation of the switch can be checked with an ohmmeter.

(3) TEST RESULTS.—If each assembly gives satisfactory operation during the bench test, the equipment may be installed in the aircraft without further tests. Should unsatisfactory operation be noted, refer to section V for the proper maintenance procedure.

b. INSTALLATION. — The exact location of the radio equipment will vary in each type of airplane. The position of the various assemblies should be such that the equipment is approximately horizontal when the plane is in level flight. All assemblies should be installed so that minimum lengths of cording are required and so that the voltage drop will be reduced to a minimum. Some planes may have special racks or shelves for mounting the assemblies, in which case these should be used.

Note

> Before proceeding with the installation, check to make sure that the proper mounting bases have been supplied. The bases used with this equipment are identical in dimensions and appearance to the bases supplied with Radio Set SCR-274, which is often installed in the same aircraft. The bases for the latter set do not have shock absorbers adequate to support the transmitter, receiver, and power junction box of Radio Sets AN/ARC-3, AN/ARC-36 or AN/ARC-49.

(1) MOUNTING BASE INSTALLATION. — A possible location of the major assemblies in respect to each other is shown in figures 8-1, 8-2 and 8-3. However, this plan can be used only when sufficient space is available for mounting the transmitter, receiver, and power junction box in one location.

(*a*) Place the correct Mounting Bases in proper relation to each other for mounting the power junction box, receiver, and transmitter.

(*b*) Use each base as a template and mark the point where holes should be drilled for mounting. Be sure to allow sufficient clearance on all sides of the assemblies for external connections and proper action of the shock absorbers. See figures 8-4 through 8-11 for overall mounting dimensions.

(*c*) Drill suitable holes for No. 10 machine screws at the points marked.

(*d*) Place each mounting base in position, then fasten securely. Use a lockwasher on each screw under each nut.

(*e*) Install Mounting FT-240-A in the pilot's compartment, in such a position that he can easily reach Control Box C-118/ARC-3, or C-118A/ARC-3 when it is installed on the mounting. In an aircraft with dual controls, install the control box between the pilots where it will be easily accessible to both. Control Panel C-404/A, C-404A/A or Control, Radio Set C-1400/ARC-49 must be located in a position convenient to and readily accessible to the using personnel. All radio and interphone panels for a particular crew position are normally mounted in a box or rack located so as to be convenient to the crew member using them.

Note

> Control Unit C-197/ARC is used in fighter aircraft installation, only. If necessary prepare a special mounting bracket or box for mounting Control Unit C-197/ARC-3 and install adjacent to Control Box C-118/ARC-3 or C-118A/ARC-3. Control Unit C-197/ARC-3 is not used when Control Panel C-404/A or C-404A/A is installed.

(*f*) Install Control Unit C-197/ARC-3 adjacent to the control box in fighter aircraft. Drill a ⅜-inch hole for the shaft, and for mounting purposes two holes suitable for No. 6-32 machine screws.

(*g*) Remove the knob from the control unit, then place the unit in position and secure it with ½-inch, No. 6-32 machine screws, inserted from the front of the mounting surface.

(*h*) Replace the knob and tighten securely when the unit has been installed.

(2) MOUNTING MAJOR ASSEMBLIES ON BASES.

(*a*) RECEIVER AND TRANSMITTER.

1. Hold the unit slightly above its mounting base and align the four holes in its base with the four studs on the mounting base, then lower the unit onto the latter. Snap the snap-slide assemblies. Each side of the receiver and transmitter base has two snap-slide assemblies which are connected by a rod and can be locked from either end.

2. Check the snap-slide assemblies to make sure they are locked securely in place.

(*b*) POWER JUNCTION BOX.

1. Hold the unit slightly above its mounting base and align the four holes in its base with the four studs on the mounting base, then lower the unit onto the mounting base studs and snap the snap-slide assemblies. Four individual snap-slide assemblies are used; these *must* be individually snapped.

2. If the dynamotor units have been previously removed from the junction box chassis, replace them. They are secured to the latter by guide pins and snap-slides. Align the dynamotors with the guide pins and then lock in place by snapping each snap-slide assembly. Power connection is by a plug and socket arrangement for each dynamotor. Because of their size and the guide pins used, the dynamotors cannot be interchanged or placed in the wrong position.

(*c*) CONTROL BOX.

1. Slip the flange of the control box under the "ears" on Mounting FT-240-A, then press the control box flatly against the mounting so that the two studs properly engage the snap-slide assemblies.

2. Snap the snap-slide assemblies, then check to make sure the control box is held securely in place.

3. In some installations it may be necessary to change the snap-slide bracket to the opposite side of the control box because of the position of the mounting. Three extra screw holes are provided in the control box for this purpose.

(*d*) ANTENNA MAST AN-104-B.—Install the antenna mast and connect to the radio transmitter as outlined below.

1. Vertically mount the mast on the part of the aircraft body nearest the radio equipment where there are no projections which might interfere with the radiation pattern of the antenna. This is so that a uniform circular pattern will be obtained when a plane is flying horizontally.

2. Secure the antenna mast to the aircraft by means of a bracket mounted inside the skin of the aircraft. (See fig. 8-14.)

3. Fasten the flexible copper sheath of the antenna mast to the skin of the aircraft near the point where the bracket secures the antenna to the aircraft body.

4. Prepare the coaxial transmission line as shown in figure 8-16, then connect one end of the line to Socket SO-259 on the base of the antenna mast and the other end to the "PL-259" receptacle on the front panel of the transmitter.

(*e*) CONTROL PANEL C-404/A or C-404A/A.

1. Attach the cable on the control panel to the proper terminal strip.

2. Assemble the panel to the box, rack, channel, or well in the aircraft fuselage using four assembly screws in the holes provided at the corners of the panel. Make certain that the cables are dressed such that they will not interfere with the components on the control panel.

Note

A small quantity of experimental models designated Control Panel C-404(XA)/A were installed in experimental and early productions of new types of aircraft. The C-404(XA)/A is mechanically and electrically interchangeable with the C-404/A.

(*f*) CONTROL, RADIO SET C-1400/ARC-49.

1. Attach cables from the power junction box and radio receiver to proper receptacles.

2. Assemble the Control, Radio Set to the control rack, using the four captive fasteners provided.

c. FABRICATION OF CORDING.

(1) GENERAL.—Many wires used in the fabrication of interconnecting cables are alike; therefore take every precaution to make certain that each wire of each cable connects to the correct pin at each plug in which the wire terminates. Study the requirements of the installation with regard to the length and location of each cable in respect to the assemblies between which it connects. The construction of the cable will vary according to these requirements.

(2) TOOLS REQUIRED.—The following tools are normally required for making the cable assemblies:

(*a*) Long-nosed pliers.

(*b*) Phillips head screw driver, No. 2 size.

(*c*) $1\frac{9}{16}$-inch spanner wrench.

(*d*) Small soldering iron.

(*e*) Solder.

(3) PROCEDURE.—When determining the composition of each cable assembly refer to wiring diagrams in section 8. These wiring diagrams are for fighter and bomber aircraft installations and must be followed closely when fabricating cable assemblies. DO NOT make connections to other than the plug pin terminals indicated on these diagrams.

(*a*) Fabricate only one cable assembly at a time to eliminate as nearly as possible the chance of making a wrong connection.

(*b*) Determine the length of the cable assembly to be fabricated. This length will vary with different types of aircraft. Allow enough overage in length of the wires so that sufficient slack for efficient operation of the shock mountings is left at each end.

(*c*) Disassemble the plugs by removing the Phillips head set screw and removing the plug body from the shell. To disassemble Plug U-16/U, insert it in its proper receptacle or hold it firmly with a suitable tool; then with a large spanner wrench unscrew counterclockwise the slotted inner shell at the base of the plug. To connect wires of the cable assembly, remove the plug from the receptacle.

(*d*) Connect the various wires to the plug pin numbers as indicated in figures 8-17, 8-18, 8-19 or 8-20. The plug pin numbers are those enclosed by circles at each assembly. The wire numbers are indicated at each end of the wire adjacent to the plug pin numbers.

Note

Clean connections thoroughly before soldering. Do not allow excess solder to run into the small plug pins. After the soldered joint has thoroughly cooled, test the strength of the connection by giving a straight pull on each wire. Take care not to burn the bakelite portions of the plugs or the insulation on the wire.

(*e*) In connecting the wires to the plugs, strip the insulation back just far enough to thread the bare wire into the pin for proper connection. Thread the wires through the correct numbered holes in the base of the plug shell.

(*f*) Solder each wire end to its numbered pin cup in the plug body. Remove any excess solder or flux from the pins and make sure that no bare wire is exposed inside the plug.

(*g*) After all wires have been connected to the plugs at each end, check the continuity of the cable assembly against figures 8-17, 8-18, 8-19 or 8-20 with an ohmmeter.

(*h*) Having completed the continuity test, carefully slip the shell over the plug body, then align the tapped hole in the body with the hole in the shell and replace the set screw.

(*i*) To identify the ends of the various cable assemblies connecting to the power junction box and to prevent wrong cable connections, place a spot of paint on the shell of the plug that connects to the power junction box. In addition, each cable assembly should be so identified that it may be easily determined to which major assembly it connects and to which point thereon.

CAUTION

Always make sure that the plugs which are identified as in sub-paragraph (3)(*i*) above are connected to the power junction box. Improper operation and possible damage to the equipment may result if cable connections are reversed.

(4) ANTENNA CABLES.—As indicated in figures 8-17, 8-18, 8-19 or 8-20, this cable is to be made up of a suitable length of 50-ohm Radio Frequency Cable RG-8/U. Each end of this cable, which is used to connect the transmitter to the antenna and to the receiver, terminates in a Plug PL-259.

(*a*) Cut the required length of cable to be used for the connections indicated in figures 8-17, 8-18, 8-19 or 8-20.

(*b*) Disassemble Plug PL-259 by unscrewing the outer shell. Turn in a counterclockwise direction.

(*c*) Cut back the Vinylite covering 1⅛-inch, and the shielding and internal insulation ⅜-inch. (See fig. 8-16.)

(*d*) Insert the cable through the plug shell and into the plug body far enough that the shielding can be seen through the four soldering holes, with the single wire of the cable extending through the hollow pin of the plug.

(*e*) Solder the wire firmly to the end of the pin and solder the braid to the shell through the four soldering holes.

(*f*) Reassemble the plug by sliding the outer shell over the plug body then tighten securely.

d. INTERCONNECTING ASSEMBLIES

(1) Connect the transmitter-to-antenna cable from the receptacle at the base of the antenna mast to the "ANTENNA" receptacle on the front panel of the transmitter. See figures 8-17, 8-18, 8-19 or 8-20.

Note

Tighten the collar of each plug firmly when the plugs have been inserted in their respective receptacles.

(2) Connect the transmitter-to-receiver antenna cable from the "RECEIVER" receptacle on the transmitter, to the "PL-259" receptacle on the receiver.

(3) Connect the receiver-to-power junction box cable from the receptacle marked "PL-153-A" on the power junction box. Insert the plug with the identifying mark on it in the receptacle on the power junction box. (Refer to sub-par. *c.*(3)(*i*).)

(4) RADIO SET AN/ARC-3 or AN/ARC-36. — When using Control Box C-118/ARC-3 or C-118A/ARC-3 connect the control box-to-power junction box cable from the "U-16/U" receptacle on the control box, to the "U-16/U receptacle on the power junction box. In fighter aircraft installations make sure the end of this cable assembly, which contains the connections to Control Unit C-197/ARC-3 (identified by paint mark), is inserted in the receptacle marked "U-16/U" on the power junction box. When installing Control Panel C-404/A or C-404A/A, make the connections between the control panel terminal strip and the "U-16/U" receptacle on the power junction box. Control Unit C-197/ARC-3 is not used when Control Panel C-404/A or C-404A/A is installed.

RADIO SET AN/ARC-49.—The single cable between the receiver, power junction box, and the control, radio set is connected as follows:

(*a*) Insert the plug containing thirteen (13) wires in the receptacle marked PL-153-A on the receiver.

(*b*) Insert the plug containing five (5) wires in the receptacle marked PL-153-A on the power junction box.

(*c*) Insert the plug containing eight (8) wires in the receptacle marked U-15/U on the control, radio set.

(5) RADIO SET AN/ARC-3 or AN/ARC-36. — Connect the transmitter-to-power junction box cable from the "U-15/U" receptacle on the transmitter to the "U-15/U" receptacle on the power junction box. Remove the black cover from the "PL-151-A" receptacle on the transmitter and insert Plug PL-151-A. This is the "MCW" connection between the transmitter and the power junction box and is an integral part of the transmitter-to-power junction box cable assembly.

RADIO SET AN/ARC-49. — Connect the control, radio set-to-power junction box cable from the "PL-153-A" receptacle on the control, radio set to the "U-16/U" receptacle on the power junction box.

WARNING

Before making the connection described in (6) below always turn the equipment OFF. If this is not done, the equipment will be turned on when this connection is completed and high voltage will exist in various parts of the equipment.

(6) Connect the power junction box-to-circuit breaker cable from the "PL-148-A" receptacle on the power junction box to the load side of the circuit breaker.

CAUTION

The lead connected to pin No. 1 of Plug PL-148-A must be connected to the positive side of the aircraft battery circuit, and pin No. 2 must be connected to the negative side.

e. PARALLEL OPERATION OF MEDIUM FREQUENCY RECEIVER.—If in some installations it is desirable to feed the output of an AN/ARC-3, AN/ARC-36, or AN/ARC-49 Radio Receiver and the output of a medium frequency receiver of Radio Set SCR-274 simultaneously into the headsets proceed as follows:

(1) Connect a number 20 gauge stranded wire to pin number 14 of plug PL-153-A, which is connected to the radio receiver.

(2) Connect the opposite end of this wire to the audio output of the medium frequency receiver. The outputs of both receivers will be heard in the headsets when both receivers are in operation.

f. INSTALLATION INSPECTION.—When all installation work has been completed, make a thorough inspection to determine that all equipment has been properly installed. No internal inspection of the equipment need be made since the operation was checked during the bench test.

(1) Check the mountings and snap-slides. Make sure each assembly is securely anchored.

(2) Check the antenna mast installation and the connection thereto.

(3) Make sure that the cable assemblies with the identifying paint mark are inserted in the proper receptacle on the power junction box.

(4) Check the position of all other plugs. Tighten the knurled rings on all plugs.

(5) Check the fuses on the top of the power junction box chassis.

(6) Make sure all cable assemblies are securely anchored to the aircraft structure where the length of the cable assembly requires.

(7) Make sure the transmitter and receiver covers are secure.

2. ADJUSTMENT.

The adjustments required in setting up the various channels for operation and adjustment of the squelch and volume control are outlined here. No other adjustments are necessary prior to placing the equipment in operation.

a. SELECTING THE PROPER CRYSTALS.

(1) TRANSMITTER.—To select the proper transmitter crystal for a particular channel, divide the desired operating frequency by 18 or refer to table "6-8" or "6-9." The crystal frequency in kilocycles is stamped on each crystal name plate.

$$fc = \frac{fo}{18}$$

Where fc=crystal frequency and fo=desired operating frequency.

(*a*) Example:

To set up a 100-megacycle operating frequency $fc = \frac{100}{18} = 5{,}555.55$ kilocycles.

Select a crystal with 5555.55 kilocycles stamped on its name plate.

(2) RECEIVER.—The frequency of the correct receiver crystal to be used can be found in the following manner or by referring to table "6-8" or "6-9."

Note

On the AN/ARC-36, the frequencies selected for use on corresponding channels "A" and "A1", "B" and "B1", etc., must be within 2 megacycles when operating at frequencies below 120 megacycles and within 5 megacycles when operating above 120 megacycles.

$$fc = \frac{fo-12}{H}$$

Where fc = crystal frequency and fo = frequency to which the receiver is to be tuned and H = harmonic.

The correct value of H is given in the following table:

Frequency (fo)	*Receiver Crystal Harmonic (H)*
100-108	11
108-116	12
116-124	13
124-132	14
132-140	15
140-148	16
148-156	17
156	18

No crystals below 8000 kilocycles, or above 8727 kilocycles should be used.

(*a*) Example:

To select a proper crystal for a 100-megacycle channel

$fo = \frac{100-12}{11} = 8{,}000$ kilocycles.

Select a crystal with 8000.00 kilocycles stamped on its name plate.

b. SETTING UP CHANNELS.

(1) TRANSMITTER.

(*a*) On the AN/ARC-3 or AN/ARC-49 Radio Transmitter turn the winged Dzus fastener and open the hinged crystal cover door at the left of the front panel. On the AN/ARC-36 remove the cover door entirely by loosening the Dzus fasteners.

The crystal sockets are designated as follows:

Equipment	*Number of Channels*	*Channel Designation*	*Crystal Type Used*
AN/ARC-3	8	A through H	DC-11-A, DC-16-A, DC-26-A, or CR-1A/AR
AN/ARC-36	16	A through H and A1 through H1	DC-11-A, DC-16-A, DC-26-A, or CR-1A/AR
AN/ARC-49	48	A1 through A12, B1 through B12, C1 through C12, and D1 through D12	CR-18/U

(*b*) Insert the selected crystals in the properly lettered sockets.

(*c*) Close or replace the crystal compartment door, as the case may be (see para. (*a*) above), and fasten the door to hold the crystals firmly in place.

(*d*) No other adjustment is necessary. The transmitter automatically tunes to the selected channel.

(2) RECEIVER.

(*a*) On the AN/ARC-3 or AN/ARC-49 Radio Receiver open the crystal compartment cover by pressing the release button at the top of the hinged crystal cover on the front panel.

Note

The AN/ARC-36 Radio Receiver crystal compartment door is not hinged. The cover must be entirely removed by loosening the Dzus fasteners and releasing the latch.

The crystal sockets are designated as follows:

Equipment	*Number of Channels*	*Channel Designation*	*Crystal Type Used*
AN/ARC-3	8	A through H	DC-11-A, DC-16-A, DC-26-A, or CR-1A/AR
AN/ARC-36	16	A through H and A1 through H1	DC-11-A, DC-16-A, DC-26-A, or CR-1A/AR
AN/ARC-49	48	A1 through A12, B1 through B12, C1 through C12, and D1 through D12	CR-18/U

(*b*) Insert the selected crystals in the properly lettered sockets.

(*c*) The AN/ARC-3 or AN/ARC-36 receiver has eight calibrated thumbwheels designated from "A" through "H" and the AN/ARC-49 has eight thumbwheels designated as follows: A(1-6), A(7-12), B(1-6), B(7-12), C(1-6), C(7-12), D(1-6), and D(7-12). Set each thumbwheel to the designated operating frequency for that particular channel.

Note

The AN/ARC-36 Radio Receiver has one thumbwheel to control two channels (A and A1, B and B1, etc.). The thumbwheel is set to a frequency midway between the desired channels and the operation of the Radio Receiver is checked for correct operation on both channels. If incorrect operation is obtained adjust the thumbwheel until both channels operate correctly.

For Radio Receiver R-608/ARC-49. The maximum recommended frequency difference between two channels using the same thumbwheel is 6 megacycles. To cover this 6 megacycle spread, set the thumbwheel at the lowest frequency and check for proper stopping at the highest frequency. If the unit does not stop properly, set the thumbwheel at a higher frequency in half megacycle steps until proper stopping is obtained. This manner of setting insures proper stopping and normal sensitivity at all frequencies used in that range.

(*d*) Close or replace the crystal compartment door, as the case may be (see para. (*a*) above), and fasten the door to hold the crystals firmly in place.

(*e*) No other adjustments are required. The receiver automatically tunes to the desired channel frequency when the respective channel is selected on the control.

(*f*) Place the squelch control in the "OFF" position by raising the sliding cover on the front panel of the receiver and turning the shaft with a screw driver to the full clockwise position. Final adjustment of this control must be made after the equipment is placed in normal operation.

(*g*) The final adjustment of the volume must be made after the equipment is placed in normal operation.

c. ADJUSTMENT OF SQUELCH CONTROL.—Background noise in the receiver may be reduced effectively by the audio squelch, which is adjustable. Access to the screwdriver adjustment of the squelch circuit control is provided by the sliding cover marked "SQUELCH" located just to the right of the frequency indicating dial on the front panel. Adjust the squelch circuit as instructed below.

(1) Rotate the control shaft in a counterclockwise direction to increase the squelch action. Increasing the squelch action decreases the background noise level and at the same time requires a stronger signal to "trip" the squelch action and permit normal reception.

(2) To decrease squelch action rotate the control shaft in a clockwise direction. Decreasing squelch action increases the background noise level, and also increases the receiver sensitivity to weak signals.

Note

Set the squelch action no higher than necessary to reduce the background noise level to a tolerable level, as an increase in squelch action also prevents weak signal reception.

3. PERFORMANCE TEST.

a. GENERAL.—When all installation and adjustments have been completed as outlined in paragraphs 1 and 2, this section, and before turning the equipment over to the operating personnel, test the equipment to determine if the installation and adjustments have been properly made. Follow the procedure below for this test.

b. PROCEDURE.

(1) For single seat aircraft connect the headset, through a headset extension cord, to the "TEL" jack on the control box or to the headset extension cord wired to the control panel. For multiplace aircraft connect the headset to the headset extension cord wired to the interphone control panel or jack box at one of the crew positions fitted with a VHF command radio set control unit (usually pilot's or co-pilot's position).

(2) For single seat aircraft connect the microphone to the "MIC" jack on the control box (using a microphone extension cord where required) or to the microphone extension cord wired to the control panel. For multiplace aircraft connect the microphone to the microphone extension cord wired to the interphone control panel or jack box at one of the crew positions fitted with a VHF command radio set control unit (usually the pilot's or co-pilot's position).

Note

When using Microphone T-17 connect the microphone to the "MIC" jack on the radio control or interphone control box or jack box. To use Microphone T-17 with an interphone or radio control panel, remove the PL-68 plug, assemble terminal lugs to the conductors, and connect the microphone directly to the control panel terminal strip.

When Intercommunications Set AIC-10 is used with Radio Transmitter T-67B/ARC-3, T-312B/ARC-36 or T-452/ARC-49 a switch, S-103, accessible through the bottom cover of the transmitter is set to the "INTERCOM" position.

(3) To start the equipment when using a control box, depress the channel selection push button for the desired channel. When using a control panel place the "ON-OFF" toggle switch in the "ON" position and select the desired channel. This action turns on both the transmitter and the receiver, which automatically tune to the selected channel.

(4) Allow 30 to 45 seconds for the tubes in the equipment to reach operating temperature. During the latter portion of this warm-up period, an audio tone will be heard in the headset. When this tone stops, the receiver and transmitter have been tuned to the selected channel; the receiver output should be heard in the headset immediately afterward.

Note

In single place aircraft the audio level fed to the headset may be adjusted by means of the "VOLUME" control on Control Panel C-404/A, C-404A/A, or Control Radio Set C-1400/ARC-49 or by means of Control Unit C-197/ARC-3 (VHF AUDIO) when Control Box C-118/ARC-3 or C-118A/ARC-3 is installed. For multiplace installations the level of the audio signal is controlled by the volume control on Control Panel C-404/A, C-404A/A or Control, Radio Set C-1400/ARC-49 and the volume control on the interphone control panel, or by the volume control on the interphone jack box and Control Unit C-197/ARC-3 (if installed) when using Control Box C-118/ARC-3 or C-118A/ARC-3 in conjunction with the interphone system. To use the VHF Command Set in multiplace installations, make certain that the facility selector switch on the interphone control panel, in use, is in the "COMMAND & MIXED SIGNALS" or the "COMMAND" position (depending on the type of control panel used) or that the facility selector switch on the interphone jack box or control box in use, is in the "VHF COMMAND" position.

(5) Push the press-to-talk button on the microphone and speak into the microphone. Speech (sidetone) which modulates the transmitter should be audible in the headset. If none is heard, check to make sure a crystal has been inserted for that channel of the transmitter. Release the press-to-talk button to restore receiver operation.

(6) Establish two-way radio communication with an aircraft in flight or with the control tower as a final check on the operation of the equipment.

(7) Adjust the squelch control for the desired background noise level consistent with the operating conditions. (Refer to par. 2 *c*, this sec.)

(8) Check the "MCW" operation by pressing the "Tone" button on the Control Box or on the Control, Radio Set C-1400/ARC-49; or by pressing the "D/F Tone" button on Control Panel C-404/A or C-404A/A.

(9) Select each of the other set-up channels, and check the operation of each as in sub-paragraphs (4), (5), (6), (7) and (8) above. The transmitter and receiver tune to the selected channel simultaneously. Approximately two seconds are required to select channels. An audio tone will be heard in the headset while the equipment is tuning.

(10) To turn the equipment off when using Control Box C-118/ARC-3, first press the unidentified push button above and to the left of the "OFF" button and simultaneously press the "OFF" button. When using the Control Box C-118A/ARC-3, turn the equipment

SECTION IV

THEORY OF OPERATION

1. GENERAL.

a. PURPOSE.—Radio Sets AN/ARC-3, AN/ARC-36 and AN/ARC-49 are airborne receiving and transmitting equipments designed to provide "VOICE" and "MCW" plane-to-plane or plane-to-ground communications.

b. FUNCTION.

(1) The radio transmitter contains nine tubes and provides a crystal-controlled RF power output of approximately eight watts on any of the available channels. Radio Set AN/ARC-3 provides eight frequency channels, Radio Set AN/ARC-36 sixteen, and Radio set AN/ARC-49 forty-eight. Provisions for voice and tone modulation (MCW) are incorporated. When using voice modulation, the carrier can be modulated approximately 85 percent. When using tone modulation, the carrier can be modulated approximately 75 percent. The various channels are automatically selected from a remote location by an electrically operated channel-selecting mechanism when the procedure explained in section III par. 2.a. is followed. Transmitter and receiver channels for each frequency are selected simultaneously.

(2) The radio receiver is a 17-tube, crystal controlled superheterodyne. Four dual-purpose tubes are used. The AN/ARC-3 receiver is designed for operation on eight pre-selected channels, the AN/ARC-36 has sixteen, and the AN/ARC-49 has forty-eight channels. Automatic selection from a remote location of the various channels by an electrically operated channel-selecting mechanism occurs when the procedure explained in section III par. 2.a. is followed.

(3) The power junction box contains Dynamotor Units DY-21/ARC-3 and DY-22/ARC-3, which supply the required high voltage for the operation of the radio transmitter and radio receiver, respectively. This junction box also contains fuses for each dynamotor circuit and, in addition serves as the junction point for all interconnecting cables between the receiver, transmitter, power source, and control unit.

(4) The control or control panel applicable to the equipment provides facilities for the complete control and operation of Radio Set AN/ARC-3, AN/ARC-36, or AN/ARC-49 from a remote location. (The remote operation of AN/ARC-36 equipment also requires the use of Mounting MT-798A/U.)

(5) Control Unit C-197/ARC-3 is used only in fighter aircraft installations. It is only used in conjunction with Control Box C-118/ARC-3 or C-118A/ARC-3; it controls the volume of the received signal in the pilot's headset.

(6) In the AN/ARC-3 or AN/ARC-36 equipment automatic mechanical tuning operations are performed by a system consisting of an electric motor, clutch and brake mechanism, gears, and drive shafts. The AN/ARC-49 equipment uses an identical system plus two solenoid operated rotary switches for each receiver and transmitter. The mechanical characteristics of the receiver and transmitter tuning mechanisms consist essentially of the same components.

(7) Modification Kit MX-1131A/ARC converts the eight channel AN/ARC-3 to a sixteen channel AN/ARC-36 equipment. The Modification Kit consists of Crystal Socket Adapters UG-613A/U and UG-614A/U, Covers CW-220A/U and CW-221A/U, Mounting MT-798A/U, and two nameplates. The nameplate designed T-312/ARC-36 will be used when modifying the T-67/ARC-3. The "A" and "B" versions of the AN/ARC-3 transmitter will become the "A" and "B" versions of the AN/ARC-36 transmitter. A similar system is employed for the receiver nomenclature and nameplates.

2. DETAILED FUNCTIONING.

a. RADIO TRANSMITTER T-67/ARC-3, T-67A/ARC-3, T-67B/ARC-3, T-312/ARC-36, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49.—The circuit for the transmitter (see figs. 4-1 and 8-25) is not unusual, except that the tuning system works in coordination and simultaneously with the receiver tuning system. It is so designed that channels may be set up without the necessity of tuning adjustments. The variable capacitors are driven by a motor, which is controlled by the harmonic generator circuit in such a fashion that the tuning drive mechanism is stopped automatically when the variables are tuned to the pre-set frequency. The circuit employs a crystal-controlled oscillator, the plate circuit of which is tuned to the second harmonic of the crystal. Two tripler stages follow the oscillator and precede the final amplifier, thus making the final output frequency 18 times that of the crystal. The second tripler is push-pull. It drives a push-pull final output stage, which is modulated by a push-pull modulator circuit, driven by a triode speech amplifier. A side-tone amplifier is wired in parallel with the modulators and amplifies the audio signal for transmission monitoring purposes.

Note

> On late production of Radio Transmitter T-67B/ARC-3 or T-312B/ARC-36, V-107 and V-108 were changed from JAN-6L6GA to JAN-6L6WGB. Radio Transmitter T-452/ARC-49 employs JAN-6L6WGB tubes.

(1) RF CIRCUITS.

(*a*) OSCILLATOR.—This is a modified Pierce oscillator circuit, using the JAN-6V6GT tube (V-101).

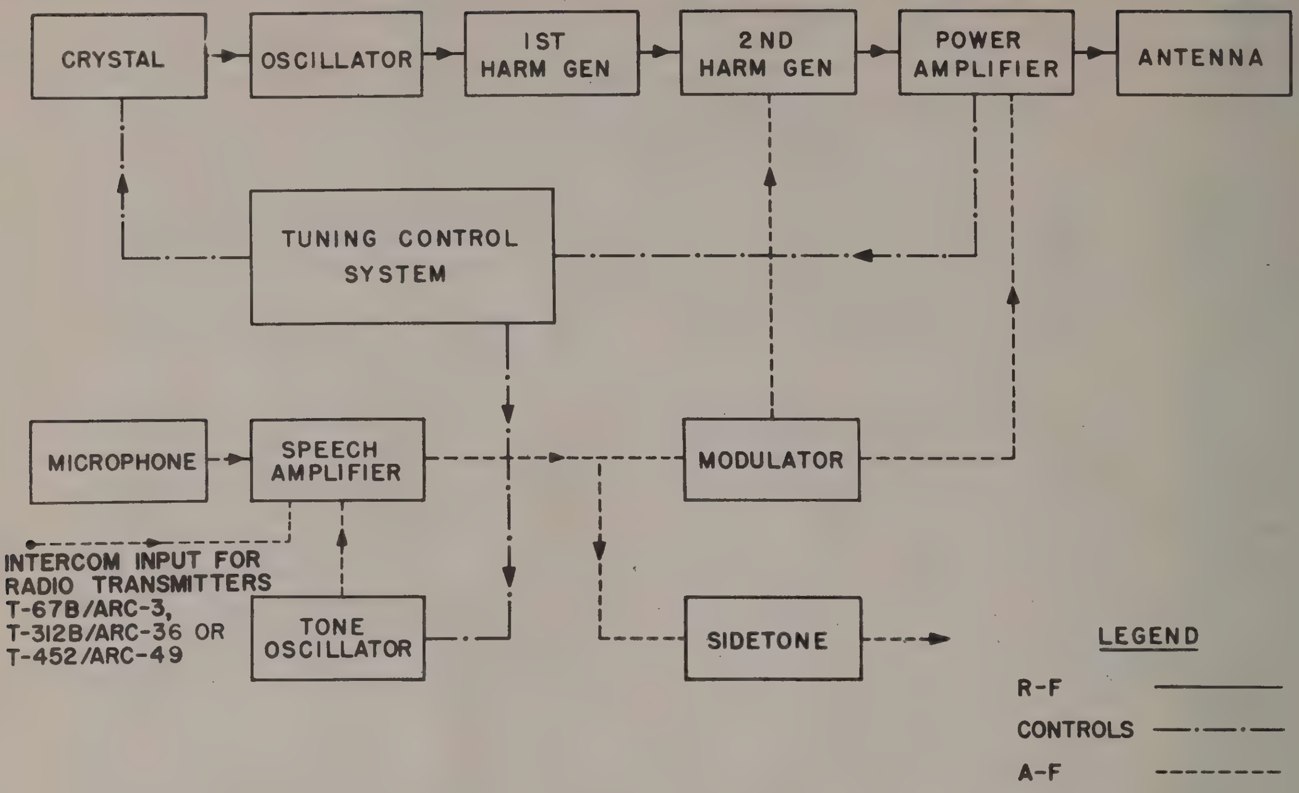


Figure 4-1. Radio Transmitter—Block Diagram

The screen of the tube is used as the anode of the oscillator. Oscillations are sustained regardless of the frequency to which the plate circuit is tuned. The plate circuit is tuned to the second harmonic of the crystal frequency by means of Inductor L-103 (which has an adjustable iron core for alignment) and variable capacitor C-106. AN/ARC-3 or AN/ARC-36 Radio Transmitters having "M-1" stamped on the case near the nameplate have had the value of resistors R-104 and R-105 changed to lower the screen voltage of the oscillator tube. All later versions and the AN/ARC-49 Radio Transmitter have incorporated this change. In addition to this change the AN/ARC-49 Radio Transmitter oscillator circuit has been modified to insure proper performance when using CR-18/U crystals.

(*b*) FIRST HARMONIC GENERATOR.—Output of the oscillator is fed into the JAN-6V6GT tube (V-102). The plate circuit of the tube is tuned to the third harmonic of the grid frequency by variable capacitor C-115 and Inductor L-105, which are located in the grid circuit of the following tube. This is the sixth harmonic of the crystal frequency.

(*c*) SECOND HARMONIC GENERATOR. — The output of the first harmonic generator is fed by means of an unbalanced push-pull circuit into the grids of the JAN-832A tube (V-103). The plates are tuned to the third harmonic of the grid frequency, or the 18th harmonic of the crystal frequency by the ganged, variable capacitor C-122.

(*d*) POWER AMPLIFIER.—The output of the second harmonic generator is fed in push-pull into the grids of the JAN-832A power amplifier (V-104). This is a class C amplifier and has an output of approximately 8 watts RF into the antenna. The antenna is coupled inductively into the plate tank circuit, with a coaxial cable feeding the transmitter output into the antenna. Coupling is adjustable by means of the sliding rack on which the antenna coil is mounted.

1. Normally (when receiving), the antenna coil is disconnected from the antenna. Connection is made through antenna relay K-101 whenever the transmitter is operated.

2. The grid current of the power amplifier tubes provides 20 to 50 volts direct current for operation of the tuning control tube JAN-12SH7 (V-105). A bias control variable resistor, R-124 is provided for adjustment of this voltage to the required level.

(2) AUDIO CIRCUITS.

(*a*) MICROPHONE INPUT CIRCUIT. — The input from the microphone is connected into the primary of the transformer T-103. The transformer output is fed through the altitude gain control R-142 and tone oscillator relay K-106, into the grid of the JAN-6J5GT speech amplifier tube V-106.

Note

Switch S-103 and resistors R-151, R-152 and R-153 were added to convert Radio Transmitter T-67A/ARC-3 to T-67B/ARC-3 and T-312A/ARC-36 to T-312B/ARC-36. A later production change deleted R-151 and changed the value of R-153. S-103, R-152 and the new value of R-153 are incorporated into Radio Transmitter T-452/ARC-49. With switch S-103 in the "MIC" position the functioning of the microphone input circuit is as described above. When switch S-103 is placed in the "INTERCOM" position (accessible through a hole in the bottom cover) the grid of the speech amplifier JAN-6J5GT (V-106) disconnects from the altitude gain control R-142 and microphone transformer T-103 and connects to the intercom voltage divider consisting of R-151 and R-153. Intercom output may be used to modulate the transmitter when the switch S-103 is in this position and when the proper connections are made to pins 3 and 4 on plug P-103. Resistor R-152 was added for grid isolation.

(*b*) ALTITUDE GAIN CONTROL.—The altitude gain control R-142 consists of a 140,000-ohm potentiometer, the setting of which is automatically controlled by means of an aneroid chamber and which varies with the altitude of the equipment. The gain of the microphone circuit is increased by 6 decibels at 15,000 feet and 12 decibels at 25,000 feet.

(*c*) SPEECH AMPLIFIER AND TONE OSCILLATOR.—Tube JAN-6J5 (V-106) is used in a class A amplifier circuit that serves to amplify the audio input signal. The output of the tube is fed in parallel to the driver transformer T-102, and to the grid of the sidetone amplifier tube JAN-6V6GT (V-109). (See figs. 4-2 and 4-3.)

1. The speech amplifier tube also serves as an audio oscillator and emits a constant 1000-cycle tone whenever the tone relay (K-106) is closed. Figures 4-2 and 4-3 show the two methods of connecting the tube. For simplicity, relay K-106 has been omitted from the diagrams. Relay K-106 when operated performs the following functions:

a. Closes the push-to-talk circuit and sets the transmitter in operation.

b. Disconnects the grid of tube JAN-6J5 (V-106) from the microphone transformer T-103 and connects it to the tone oscillator transformer T-101.

Note

On Radio Transmitter T-67B/ARC-3, T-312B/ARC-36 or T-452/ARC-49, relay K-106 disconnects the grid of tube JAN-6J5 (V-106) from the switch S-103 and connects it to the tone oscillator transformer T-101.

c. Connects the plate of tube JAN-6J5 (V-106) to the side of the tone oscillator transformer, opposite the grid.

d. Disconnects the cathode bypass from the speech amplifier tube JAN-6J5 (V-106). This provides a certain amount of degeneration and increases the stability with various tubes.

e. Connects a shunt resistor R-139 across the input to the grid of the side tone amplifier tube JAN-6V6 (V-109), thus reducing the level of the signal at this point.

2. The reconnection of plate and grid causes speech amplifier tube JAN-6J5 (V-106) to operate as a Hartley oscillator. Transformer T-101 is tuned by capacitor C-139 to produce 1000-cycle oscillations.

(*d*) MODULATOR CIRCUIT.—The output of the driver transformer T-102 is fed in push-pull into the grids of a pair of JAN-6L6GA tubes V-107 and V-108. They are class A amplifiers and have an output of approximately 24 watts. This modulating power is fed through the modulation transformer T-104 into the screen of the second harmonic generator and into the plate and screen of the power amplifier. It provides sufficient power to modulate the RF carrier to at least 95 percent on negative peaks and 60 percent on positive peaks, with normal input to the microphone circuit or intercom circuit on Radio Transmitter T-67B/ARC-3, T-312B/ARC-36, or T-425/ARC-49.

(*e*) SIDETONE AMPLIFIER.—The audio signal, fed into the grid of the sidetone amplifier tube JAN-6V6GT (V-109), is amplified and fed into the sidetone output transformer T-105. (See fig. 4-4.) This tube is used as a class A amplifier, with a maximum output of approximately 800 milliwatts. Negative feedback is applied from plate to grid through capacitor C-144 and resistor R-143, and the secondary of the sidetone output transformer T-105 is loaded by resistor R-109B to improve regulation. The secondary of the output transformer is provided with a tap and may be used with either high or low impedance headsets. From 1 to 12 headsets may be used in parallel without appreciably changing the audio level in any of the headsets. The sidetone amplifier input is fed through capacitor C-142 and resistor R-140 from the plate of the speech amplifier JAN-6J5 (V-106) to the grid of the sidetone amplifier, JAN 6V6GT (V-109).

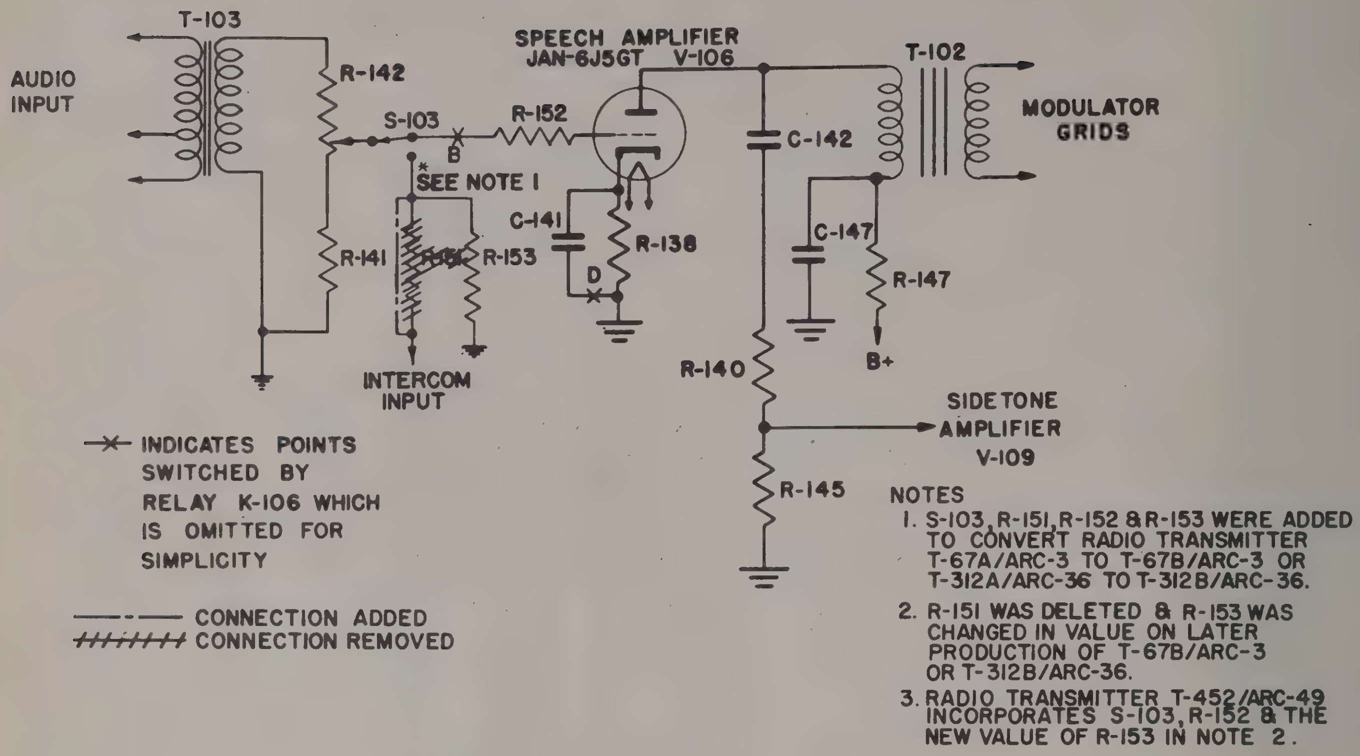
(3) TUNING SYSTEM.—The tuning system is described in detail in paragraph 3*b*, this section.

b. RADIO RECEIVER R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36, R-428B/ARC-36, or R-608/ARC-49.—The receiver is a 17-tube super-heterodyne that includes four dual-purpose tubes. It is crystal-controlled and employs a number of unusual features. (See figs. 4-5, 8-28, 8-29 and 8-31.)

Note

On Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 all JAN-6AK5 tubes were changed to JAN-6AK5W. A later production change converted the JAN-6AK5W tubes to JAN-5654/6AK5W tubes. Radio Receiver R-608/ARC-49 employs JAN-5654/6AK5W tubes. All types are electrically and mechanically interchangeable.

The tuning system is entirely automatic. It is so designed that channels may be set up with-


T-103
AUDIO INPUT
R-142
S-103
R-152
B
SPEECH AMPLIFIER
JAN-6J5GT V-106
T-102
MODULATOR GRIDS
C-142
* SEE NOTE 1
C-141
R-138
D
R-141
R-151
R-153
C-147
R-147
B+
INTERCOM INPUT
R-140
SIDETONE AMPLIFIER V-109
R-145

INDICATES POINTS SWITCHED BY RELAY K-106 WHICH IS OMITTED FOR SIMPLICITY

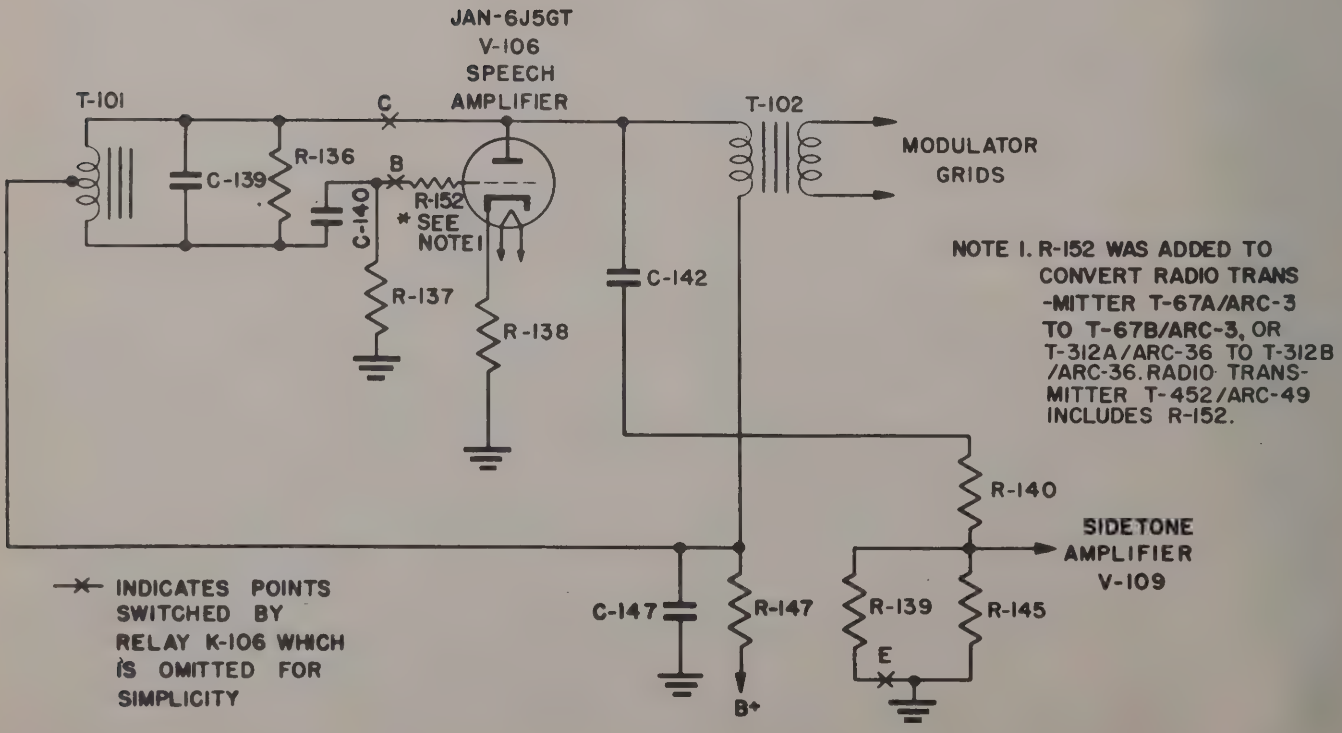
CONNECTION ADDED

CONNECTION REMOVED

NOTES

1. S-103, R-151, R-152 & R-153 WERE ADDED TO CONVERT RADIO TRANSMITTER T-67A/ARC-3 TO T-67B/ARC-3 OR T-312A/ARC-36 TO T-312B/ARC-36.
2. R-151 WAS DELETED & R-153 WAS CHANGED IN VALUE ON LATER PRODUCTION OF T-67B/ARC-3 OR T-312B/ARC-36.
3. RADIO TRANSMITTER T-452/ARC-49 INCORPORATES S-103, R-152 & THE NEW VALUE OF R-153 IN NOTE 2.

Figure 4-2. Radio Transmitter—Speech Amplifier


JAN-6J5GT
V-106
SPEECH AMPLIFIER
T-101
C
C-139
R-136
B
C-140
R-152
* SEE NOTE 1
R-137
R-138
C-142
T-102
MODULATOR GRIDS
R-140
SIDETONE AMPLIFIER V-109
C-147
R-147
B+
R-139
R-145
E

NOTE 1. R-152 WAS ADDED TO CONVERT RADIO TRANSMITTER T-67A/ARC-3 TO T-67B/ARC-3, OR T-312A/ARC-36 TO T-312B/ARC-36. RADIO TRANSMITTER T-452/ARC-49 INCLUDES R-152.

INDICATES POINTS SWITCHED BY RELAY K-106 WHICH IS OMITTED FOR SIMPLICITY

Figure 4-3. Radio Transmitter—Tone Oscillator

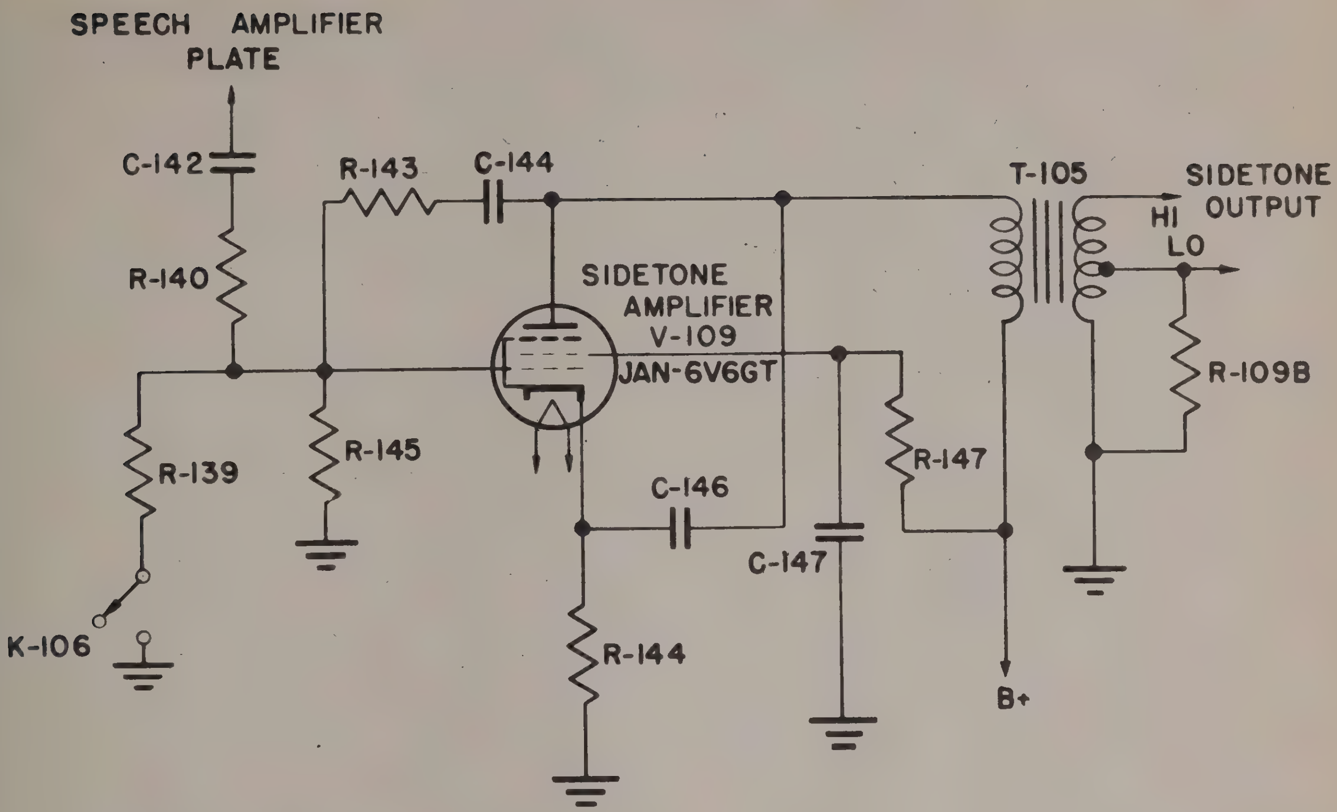


Figure 4-4. Radio Transmitter—Sidetone Circuit

out the necessity of tuning adjustments other than that on a thumbwheel cam. The variable capacitors are driven by a motor which is controlled by the harmonic generator circuit in such a fashion that the tuning drive mechanism is stopped automatically when the tuned circuits resonate at the preset frequency.

The circuit employs an RF stage with a preselector and a five-stage crystal-controlled harmonic generator, which produces a signal 12 megacycles lower than the incoming RF signal. This voltage is used to operate the tuning system and is also fed together with the incoming RF signal into the first detector. An intermediate frequency of 12 megacycles is produced. Three stages of IF amplification are provided, followed by a conventional second detector. Automatic volume control (AVC) is provided to maintain the output of the receiver relatively constant with a varying signal input.

A noise limiting system and a carrier-operated squelch circuit are also incorporated. The three stages of AF amplification provide a maximum output of approximately 1.3 watts if 12 headsets are used. The audio output system of the receiver is designed to compensate for changes in load so that no adjustment of volume is necessary when headsets are added or detached from the system.

(1) ANTENNA CIRCUIT AND RF AMPLIFIER.—The RF input from the antenna is fed through a coaxial cable into a tuned preselector stage, which is inductively coupled into the grid of the RF amplifier tube JAN-6AK5 (V-208). This is a conventional class A tuned grid, tuned plate amplifier. These three circuits are tuned by sections "A", "B", and "C" of variable capacitor C-247. The output of the RF amplifier is inductively coupled into the grid of the first detector, where it is mixed with the output of the harmonic generator, which is tuned to a frequency 12 megacycles lower than that of the incoming RF signal.

(2) HARMONIC GENERATOR CIRCUIT.—The harmonic generator produces the heterodyne frequency which is mixed with the incoming RF signal in the first detector, JAN-9001 (V-209). It consists of five stages including a crystal-controlled oscillator, a wide band amplifier, and a multiplication stage that produces crystal harmonics of high order. The crystal frequency is multiplied from 11 to 18 times, the proper multiple being selectable by means of a thumbwheel adjustment when channels are being preset. This stage is followed by two stages of amplification. Output of the final stage is inductively coupled into the grid of the first detector, JAN-9001 (V-209).

(*a*) OSCILLATOR.—A conventional oscillator circuit is used, with the crystal serving as the grid tank circuit and the plate tuned to a frequency slightly above the highest crystal frequency used (8.727 megacycles).

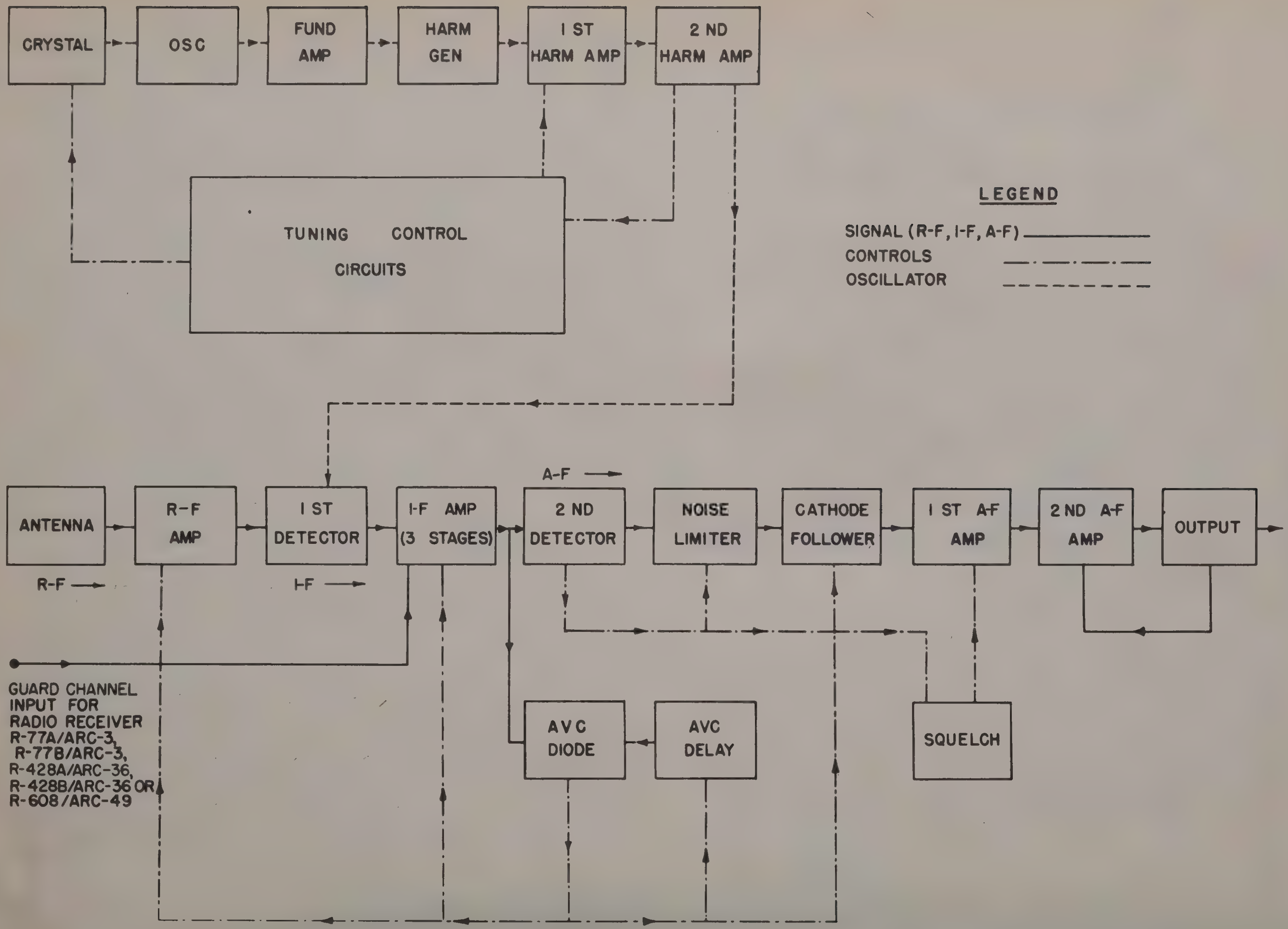

CRYSTAL
OSC
FUND AMP
HARM GEN
1 ST HARM AMP
2 ND HARM AMP
TUNING CONTROL CIRCUITS
LEGEND
SIGNAL (R-F, I-F, A-F)
CONTROLS
OSCILLATOR
A-F
ANTENNA
R-F AMP
1 ST DETECTOR
I-F AMP (3 STAGES)
2 ND DETECTOR
NOISE LIMITER
CATHODE FOLLOWER
1 ST A-F AMP
2 ND A-F AMP
OUTPUT
R-F
I-F
GUARD CHANNEL INPUT FOR RADIO RECEIVER R-77A/ARC-3, R-77B/ARC-3, R-428A/ARC-36, R-428B/ARC-36 OR R-608/ARC-49
AVC DIODE
AVC DELAY
SQUELCH

Figure 4-5. Radio Receiver—Block Diagram

The feedback capacitor C-208 is added to produce oscillator stability. A JAN-9002 (V-201) tube is used in the oscillator stage. Z-201 is the plate-tuned circuit assembly. The coil contains an adjustable iron core and resonates at a fixed frequency with capacitor C-209.

Note

In Radio Receiver R-608/ARC-49, a capacitor C-306 has been connected from the oscillator grid to ground in order to raise the input capacity to approximately 32 uuf.

(*b*) FUNDAMENTAL AMPLIFIER. — The oscillator output is fed in parallel into the grids of two JAN-6AK5 tubes (V-202 and V-203). The output of the plates is fed into the two primary windings (L-202 and L-203) of fundamental amplifier transformer T-201. These are resonated at slightly different fixed frequencies by means of adjustable iron cores. One coil is tuned to a frequency slightly above 8 megacycles and the other to a frequency slightly below 8.727 megacycles. Both coils are coupled into a common secondary L-204, which also has an adjustable iron core. The output of this transformer is fed into the grid of the harmonic generator JAN-6AK5 (V-204). By this method amplification of all frequencies from 8 to 8.727 megacycles is obtained. The RF output of this stage is 300 to 400 volts.

(*c*) HARMONIC GENERATOR. — The output of the fundamental amplifier is inductively coupled through transformer T-201 into the grid of the harmonic generator, tube JAN-6AK5 (V-204). The high RF voltage applied drives the grid hard enough to produce severe distortion, so that the output is rich in harmonics of high order. A harmonic output of 1 to 2 volts may be obtained for any harmonic from the 11th to the 18th when the plate circuit is tuned to the frequency of the desired harmonic. Capacitor C-219A is ganged with the RF variable capacitor C-247 and tunes the plate circuit so that it is always resonated at a frequency 12 megacycles below that to which the RF circuit is tuned.

(*d*) FIRST HARMONIC AMPLIFIER. — The harmonic generator output is fed into the grid of another JAN-6AK5 (V-205) tube, operating as a class C amplifier. This stage has an RF output of 15 to 20 volts. While the harmonic generator circuits are tuned to a frequency of 12 megacycles below that of the RF circuits, the range of crystal frequencies used is limited. Therefore, it may be necessary to use the 11th, 12th, 13th, 14th, 15th, 16th, 17th, or 18th harmonic of the crystal in order to obtain the multiple of crystal frequency to which the harmonic generator circuits are tuned. Selection of the particular harmonic of the crystal to be used is accomplished by manually adjusting cam switch S-204, which causes the shorting of the screen of this tube when the circuits are tuned to any frequency except those in the immediate vicinity of the desired operating frequency.

(*e*) SECOND HARMONIC AMPLIFIER.—The first harmonic amplifier output is fed into the grid of still another JAN-6AK5 (V-206) tube. This is a class C amplifier; the grid current drawn provides 15 to 20 volts direct current for biasing the tuning control tube JAN-12SH7 (V-207), as described in paragraphs 3*c*(3) (*f*) *1* c(2) or 3*c*(3) (*f*) *2* d(*1*), this section. The second harmonic amplifier stage, which provides no amplification, serves to improve the selectivity of the oscillator system. It also isolates the control tube biasing arrangement from the injection circuit in order to keep the load of the injection circuit from decreasing the voltage available for biasing the control tube. The output of this stage is inductively coupled, by means of an injection coil L-210, into the grid circuit of the first detector JAN-9001 (V-209) at a frequency 12 megacycles lower than that fed into the grid circuit from the RF amplifier, as described in paragraph 2*b* (1), this section.

(3) FIRST DETECTOR.—A JAN-9001 tube (V-209) is used as the first detector. The two frequencies fed into the grid are mixed and produce a beat frequency of 12 megacycles, which retains the modulation of the incoming RF signal. The 12-megacycle output is fed into the primary of the first IF transformer T-202. The inductance of the transformer windings may be adjusted by means of movable iron cores. Both windings are resonated to a fixed frequency of 12 megacycles and are critically coupled to produce maximum gain and best selectivity.

(4) IF AMPLIFIER STAGES.—Three stages of intermediate frequency, consisting of three JAN-12SG7GT tubes (V-210, V-211, and V-212) coupled through IF transformers T-203 and T-204 are used. Both transformers T-203 and T-204 have two variable inductance coils with movable iron cores. The coils are resonated at a fixed frequency of 12 megacycles. The transformers are slightly overcoupled to provide a broad selectivity curve. The tubes are used as conventional class A amplifiers. The output of the final stage is fed into the primary of the fourth IF transformer T-205, which is also a two-coil variable with movable iron cores. This transformer is somewhat undercoupled to produce a higher AVC voltage. The secondary of this transformer T-205 is fed into the diode of the second detector, which is part of the JAN-12H6 tube (V-213). The output of the third IF tube is also fed through capacitor C-284 to the AVC diode, which is also a part of tube JAN-12H6 (V-213).

Note

Radio Receiver R-77A/ARC-3, R-77B/ARC-3, R-428A/ARC-36, R-428B/ARC-36 or R-608/ARC-49 is provided with a jack and coaxial cable which connects to the screen of tube V-210 for the purpose of injecting a 12-megacycle signal from the guard channel converter. (See figures "8-28", "8-29", "8-30", or "8-31".)

(5) AVC SYSTEM. — The RF voltage fed into the AVC diode is rectified; the DC voltage thus produced across the load resistor R-260 is applied to the grids of the RF amplifier JAN-6AK5 (V-208), the first IF amplifier JAN-12SG7 (V-210), second IF ampli-

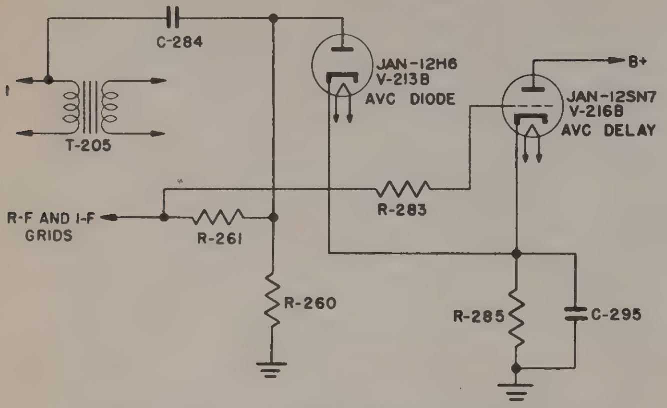


Figure 4-6. Radio Receiver—AVC Circuit

fier JAN-12SG7 (V-211), the audio cathode follower, part of JAN-12SN7/GT (V-214), and AVC delay tube, part of JAN-12SN7GT (V-216). (See fig. 4-6.) In this manner the gain in the receiver is automatically decreased as the strength of the input signal increases, thereby providing substantially constant output regardless of the strength of the input signal. In order to prevent application of AVC voltage to the grids at low RF inputs and consequently reducing the sensitivity, an AVC delay system is provided. The cathode of the AVC tube is held at a positive potential, derived from the voltage across resistor R-285. This voltage is developed by the plate current of the AVC delay tube, which is a part of the JAN-12SN7GT tube (V-216). No voltage rectification is obtained in the AVC diode until the RF voltage applied to the diode plate becomes sufficient to overcome the positive cathode potential. This occurs at about 10 microvolts input. When sufficient signal strength is applied to produce rectification, the negative DC voltage thus obtained is applied to the grid of the AVC delay tube, decreasing the plate current in this tube. This in turn decreases the voltage drop across resistor R-285 and thus decreases the potential of the cathode of the AVC diode. For high inputs then, the delay voltage is removed, reducing the cathode potential and developing a greater DC voltage across the diode load resistor. The effective AVC voltage applied to the grids is thus increased so that the output of the receiver is substantially constant regardless of input.

(6) SECOND DETECTOR AND NOISE LIMITER.—The modulated RF voltage applied to the second detector diode (part of JAN-12H6, V-213) is rectified, developing a DC voltage, upon which the audio components of the modulated wave are superimposed. (See fig. 4-7.) The audio components of this voltage are fed through the noise limiter tube into the grid of the audio cathode follower. These tube sections are both contained in the JAN-12SN7GT tube (V-214). The noise limiter tube is connected to be actually in series with the audio path. The audio voltage is fed into the plate and out of the cathode of the tube. Conduction of audio voltage through this tube is regulated by the DC components of the rectified signal voltage. The full rectified voltage, which is negative, is applied to the cathode through resistor R-265. This voltage also produces a charge on capacitor C-285. Only a portion of this rectified voltage is applied to the plate of the noise limiter through the voltage divider, which consists of resistors R-262 and R-263. As a result, the plate is less negative than the cathode; therefore it has a positive potential as compared to the cathode. The tube then conducts and allows passage of the audio signal. When any sharp pulse—such as would be produced by static or similar interference—is passed through the diode, the following actions occur:

(*a*) A large negative rectified DC voltage is produced by the rectification of this pulse in the second detector diode and appears across resistors R-262 and R-263.

(*b*) The plate of the noise limiter immediately becomes more negative to correspond with the increase in the rectified voltage.

(*c*) The time constant of the resistance-capacity network, composed of resistor R-265 and capacitor C-285, is approximately 75 milliseconds. In other words, this amount of time is required for the charge of capacitor C-285 to assume the potential of the rectified voltage produced by the pulse. As a result the potential of the cathode of the noise limiter does not immediately become more negative as does that of the plate.

(*d*) Since the plate immediately assumes a large negative potential, as described in paragraph 2*b* (6)(*b*) above, and since the cathode potential does not change, as described in paragraph 2*b* (6)(*c*) above, the plate of the noise limiter temporarily becomes more negative than the cathode and the tube stops conducting, thus blocking transmission of the pulse. The charge on capacitor C-286 maintains the voltage being fed from the noise limiter cathode into the grid of the audio cathode follower at its former level during the period of the pulse. Sharp pulses of static, etc., are thus greatly reduced without the audio signal being interrupted.

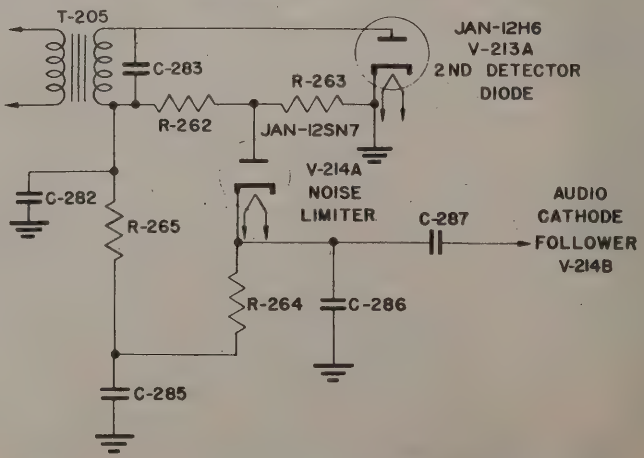


Figure 4-7. Radio Receiver—Noise Limiter Circuit

(7) AUDIO AMPLIFIER CIRCUITS.

(*a*) AUDIO CATHODE FOLLOWER AND RUNWAY LOCALIZER CONNECTION.—In order to provide a low impedance output source for runway localizer operation, an audio cathode follower is incorporated. This is part of JAN-12SN7GT (V-214). No amplification is obtained in this stage, the audio output being developed across the cathode load resistor R-268. Audio voltage is fed from the cathode of the tube through capacitor C-290 to the grid of the first AF amplifier which is part of JAN-12SL7GT (V-215). Audio voltage is also fed from the cathode of the follower tube at an impedance of approximately 1000 ohms from ground through capacitor C-288 to pin 18 of J-202, which may be connected to the runway localizer input. The fidelity of the receiver up to this point is maintained flat from 90 to 150 cycles, in order to provide equal amplification for the two runway localizer audio frequencies. The runway localizer is not normally used with this equipment.

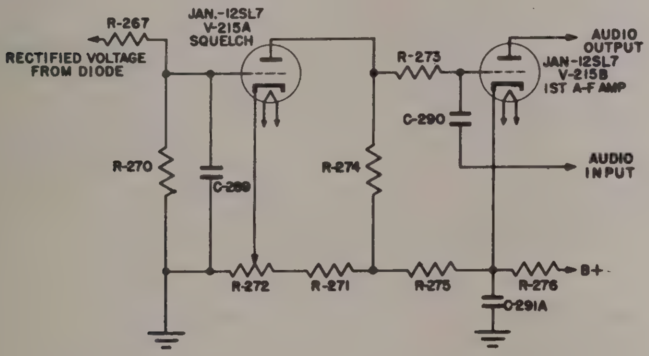


Figure 4-8. Radio Receiver—Squelch Circuit

(*b*) SQUELCH CIRCUIT AND FIRST AF AMPLIFIER.—To eliminate annoying noises when no signal is being received, a squelch tube is provided. This is part of JAN-12SL7GT(V-215). (See fig. 4-8.) The operation is as follows:

1. The grid of the first AF amplifier (part of JAN-12SL7GT, V-215) is connected through the isolating resistor R-273, to the plate of the squelch tube. This in turn is fed through the high resistor R-274 from a voltage divider circuit which is connected from B+ to ground, and which consists of resistors R-276, R-275, R-271, and R-272. The cathode of the first AF amplifier is connected to a point having a slightly higher potential than that of the squelch tube plate. The grid bias on the squelch tube is controlled by the rectified DC voltage from the second detector diode.

2. When no signal or extremely weak signals are being received, there is practically no rectified DC voltage developed by the second detector; therefore there is very little, if any, bias on the squelch tube. As a result, it draws plate current and produces a large voltage drop across resistor R-274. This reduces the potential of the squelch tube plate to a point considerably lower than the potential of the first AF cathode. Since the grid of the first AF amplifier is connected to the squelch tube plate through resistor R-273, it assumes the same potential. Consequently, the grid of the first AF amplifier becomes greatly negative with respect to the cathode, stopping the flow of current in the tube. This prevents the transmission of any signals through the tube.

3. When a moderately large signal is applied to the second detector diode, rectified DC voltage appears across the diode load and bias is applied to the grid of the squelch tube. This causes the flow of plate current in this tube to stop, which removes the voltage drop across resistor R-274 and permits the plate to assume a potential only slightly below that of the first AF cathode. When this occurs, the first AF amplifier grid is only slightly negative with respect to the cathode and the signal is passed through the amplifier in normal fashion.

4. A control, variable resistor R-272, is connected into the voltage divider to adjust the cathode potential of the squelch tube, thus controlling the amount of signal necessary to unblock the first AF amplifier. When the cathode is at ground potential, an antenna input of 10 microvolts is required to unblock the amplifier. The cathode may be varied to a point sufficiently positive to keep the squelch tube always cut off so that all signals, even very weak ones, are passed.

(*c*) SECOND AF AMPLIFIER.—The output of the first AF amplifier is fed through an audio voltage divider, consisting of resistors R-277 and R-278, into the grid of the second AF amplifier, part of JAN-12SN7GT (V-216), and further amplified. Provision is made for feeding into this grid through an audio voltage divider consisting of resistors R-280 and R-278 and a blocking capacitor C-296, the output of any medium-frequency receiver of Radio Set SCR-274 series. The two audio inputs are then amplified in parallel so that both receivers can be simultaneously monitored with a single pair of headsets. An output load, resistors R-289 and R-290, is provided for the medium frequency receiver. The resistance of this load is such that the output from either the high or low tap of the medium frequency receiver may be used.

Note

> In the Radio Receiver R-608/ARC-49 resistors R-277 and R-278 have been replaced by a potentiometer designated R-278.

(*d*) POWER OUTPUT STAGE.—The output of the second AF amplifier is fed through capacitor C-297, into the grid of the JAN-12A6GT (V-217) power amplifier. The output from the power amplifier plate is fed into the headsets through the output transformer T-206. Maximum output is approximately 1.3 watts into 12 headsets.

(*e*) AUDIO VOLTAGE REGULATION. — A portion of the output voltage is fed back, in inverse phase, to the cathode of the second AF amplifier. The final stages thus become a highly degenerative feedback amplifier whose output will remain substantially independent of variations in output load. As a result, from 1 to 12 headsets may be used in parallel. The audio level in any one of the headsets will not change appreciably when headsets are added or removed from the circuit.

Note

> On late production of Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 feedback resistor R-284 was changed in value. Radio Receiver R-608/ARC-49 contains this new value.

(8) TUNING SYSTEM.—The tuning system is described in detail in paragraph 3*c*, this section.

c. POWER JUNCTION BOX J-68/ARC-3 or J-68A/ARC-3.—The power junction box provides a high voltage supply for the transmitter and receiver (See figs. 6-39, 6-40 and 8-33.) Dynamotor D-401 generates the power for the transmitter and dynamotor D-402 generates the power for the receiver. Both dynamotors operate from the primary 28-volt DC source. The receiver dynamotor runs continuously but the transmitter dynamotor operates only when the push-to-talk or "TONE" button is depressed. Both the input and output circuits of the dynamotors are adequately filtered to suppress their noise in the receiver. A fuse is provided in each high voltage circuit to protect the receiver, transmitter and dynamotors against overloads caused by short circuits in the equipment. The power junction box also contains relays K-401, K-402, K-403, K-404, K-405, and K-406. These are associated with the tuning system and their action is described in paragraph 3, this section. This unit also serves as a junction box for the necessary interconnections between the other four components of the set.

Note

> On Power Junction Box J-68A/ARC-3 the fuse holders were changed from an open clip type to a panel mount type. A later production change converted open type relays K-401 and K-402 to hermetically sealed relays.

d. CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3.

(1) The control box is used with the AN/ARC-3 or AN/ARC-36 equipment. The control box components provide for remote control of the entire AN/ARC-3 equipment and when used in conjunction with Mounting MT-798A/U it also provides for complete remote control of the entire AN/ARC-36 equipment. The major component of this unit is the nine-pole, push-button switch S-501, which is used for controlling the power and selecting the frequency channels. (See figs. 6-41, 6-42, 8-34 and 8-35.) Each of the eight channel buttons operates a corresponding crystal relay in both the transmitter and receiver. The tuning operation is covered in detail in paragraph 3, this section. Depressing a channel push button releases the ninth push button that operates relay K-401 in the power junction box, which applies power to the equipment. The mechanical interlocking of the buttons is described in paragraph 3*a*(1)(*b*), this section.

(2) Jack J-502 is provided to accommodate the headset. This jack is connected to either the audio output of the receiver or the sidetone output of the transmitter, depending on which unit is being used. A microphone jack J-501 provides a connection for the audio input to the transmitter and also for the push-to-talk button located on the microphone.

e. CONTROL UNIT C-197/ARC-3.—This unit is used only in fighter installations in conjunction with the control box. This unit permits the pilot to control the volume of the received signal. It is connected in the headset circuit between the power junction box and the control box and consists of a potentiometer for dividing the audio voltage and a resistor for limiting the point to which the volume may be reduced. (See fig. 6-43.)

f. CONTROL PANEL C-404/A or C-404A/A.—This control panel is used with the AN/ARC-3 or AN/ARC-36 equipments to provide complete remote control. (See figs. 6-44 and 6-46.) When this control panel is used, Control Box C-118/ARC-3 or C-118A/ARC-3 is not required. When used with the AN/ARC-36 equipment it is also necessary to use Mounting MT-798A/U. The major component is an eight position rotary switch, S-901, which selects the frequency channels. Each switch position operates a corresponding crystal relay in both the transmitter and receiver. The tuning operation is covered in detail in par. 3, this section.

(1) The "ON-OFF" toggle switch, S-902, operates K-401 in the power junction box, which applies power to the equipment.

(2) A "VOLUME CONTROL," R-901, is provided to control the volume of the received signal.

(3) A "D/F TONE" push button, S-903, is provided for "MCW" operation of the transmitter. The switch operates K-106 in the transmitter. (See Par. 2*a*(2)(*c*)*1*, this section.)

(4) Control Panel C-404A/A modified the C-404/A version by adding a lighting system. A plastic lighting plate and two lights, I-901 and I-902, were added to facilitate operation in darkened areas.

g. CONTROL, RADIO SET C-1400/ARC-49.—The Control, Radio Set components provide for remote control of the entire AN/ARC-49 equipment. (See figs. 6-48 and 6-49.) The major components of this unit are the channel selecting switches S-603 and S-604. Any one of the forty-eight channels may be selected by a combination of these switches. Each switch combination inserts a particular crystal into the oscillator grid circuits of the ARC-49 Transmitter and Receiver. The tuning operation is covered in detail in paragraph 3, this section.

(1) The "ON-OFF" toggle switch S-601, operates K-401 in the power junction box which applies power to the equipment.

(2) The "TONE" switch, S-602, operates K-106 in the transmitter. See Par. 2*a*(2)(*c*)*1*, this section. It pro-

vides for "MCW" operation of the transmitter.

(3) A "VOLUME CONTROL," R-602, is provided to control the volume of the received signal.

(4) Lighting of the lettering is provided by two lamps I-601 and I-602, to provide function identification in darkness.

h. MOUNTING MT-798A/U. — This unit, part of Modification Kit MX-1131A/ARC, is used only with the AN/ARC-36 equipment. It enables the operator to select either the "Regular" or "Auxiliary" bank of crystals. It consists of a double-pole double-throw switch (S-1001) that simultaneously operates the relays in Crystal Socket Adapters UG-613A/U and UG-614A/U.

i. CRYSTAL SOCKET ADAPTERS UG-613A/U and UG-614A/U.—These plug-in units, part of Modification Kit MX-1131A/ARC, are the major components used in converting an AN/ARC-3 equipment to an AN/ARC-36 equipment. The UG-613A/U adapter plugs into the crystal socket board of the AN/ARC-3 Radio Transmitter and the UG-614A/U adapter plugs into the crystal socket board of the AN/ARC-3 Radio Receiver. These adapters enable sixteen crystals to be used instead of the eight crystals used by the AN/ARC-3 equipment. Mounting MT-798A/U operates the relays in the adapter units and when used in conjunction with a control box or control panel it enables the operator to select any of sixteen frequency channels.

3. MECHANICAL CHARACTERISTICS AND CONTROLS.

a. GENERAL.—Each of the mechanical sections of the receiver and transmitter that make up the tuning system consists of a small electric motor, a group of relays, shafting, flexible couplers, a clutch-brake, gears, bearings, cams, variable capacitors, tuning dials, and switches. The AN/ARC-49 equipment, in addition, incorporates several solenoid operated rotary switches. The mechanical and electrical functioning of the tuning system are so closely interrelated that both these characteristics are discussed in this section.

(1) CONTROLS—RECEIVING POSITION.

(*a*) If using Control Box C-118/ARC-3 or C-118A/ARC-3 the controls are on the Control Box and consist of nine push buttons; these turn the equipment "ON" or "OFF," select the proper operating channel, and place the receiver and transmitter in operation simultaneously. If using Control Panel C-404/A or C-404A/A, or Control, Radio Set C-1400/ARC-49 the controls are on the control panel and consist of an "ON-OFF" switch, a "TONE" switch, a "VOLUME" control, and one or two channel selector switches depending on which control panel is employed. The equipment operates in the receive position, except when the microphone press-to-talk button or the "TONE" button is depressed.

Note

The AN/ARC-36 equipment utilizes an additional switch that is contained in Mounting MT-798A/U.

(*b*) The equipment using Control Box C-118/ARC-3 or C-118A/ARC-3 is turned off when the "OFF" button is depressed. In order to place the equipment in operation, it is necessary to push any one of the eight channel-selecting push buttons. When this is done a mechanical latch automatically releases the "OFF" push button, closing switch S-501J. Equipment using one of the control panels requires only the operation of the "ON-OFF" switch. In either installation this completes a ground connection to relay K-401, causing it to close. The closing of the contacts connects 28 volts direct current to the receiver and transmitter tube heaters, the receiver dynamotor D-402, and the tuning control relay circuits. The equipment automatically tunes to the selected channel as described in paragraphs 3*b*(3), 3*b*(4), and 3*c*(3), this section.

(2) CONTROLS—TRANSMITTING POSITION.

(*a*) In order to transmit, the push-to-talk button on the microphone or the "TONE" button on the control box or control panel must be depressed. This connects a ground to several relays, performing the following operations (See Fig. 4-9):

1. Closes relay K-402, applying power to the transmitter dynamotor D-401.

2. Operates relay K-406, switching the headsets from the receiver output to the transmitter sidetone amplifier output.

3. Closes relay K-102, connecting high voltage to the transmitter plates and screens.

4. Operates relay K-101, switching the antenna from the receiver input to the transmitter output.

b. TRANSMITTER TUNING CONTROL SYSTEM.

(1) BASIC ELEMENTS.—The basic elements of the transmitter tuning control system are:

(*a*) Tuning control tube JAN-12SH7 (V-105).

(*b*) Tuning control relay K-103.

(*c*) Motor B-101.

(*d*) Motor relay K-104.

(*e*) Clutch-brake K-105.

(*f*) Crystal relays K-109, K-110, K-111, K-112, K-113, K-114, K-115, and K-116.

Note

Radio Transmitter T-452/ARC-49 employs rotary solenoid switches S-104 and S-105 instead of crystal relays. Radio Transmitter T-312/ARC-36, T-312A/ARC-36 or T-312B/ARC-36 employs two relays, K1002 and K1003, in addition to the crystal relays.

(*g*) Starting relays K-107 and K-108 (and K-117 for all AN/ARC-3 or AN/ARC-36 Transmitters incorporating the M-3 Modification, all later versions, and for all AN/ARC-49 Transmitters).

(*h*) Locking switch S-101-B and cam O-101.

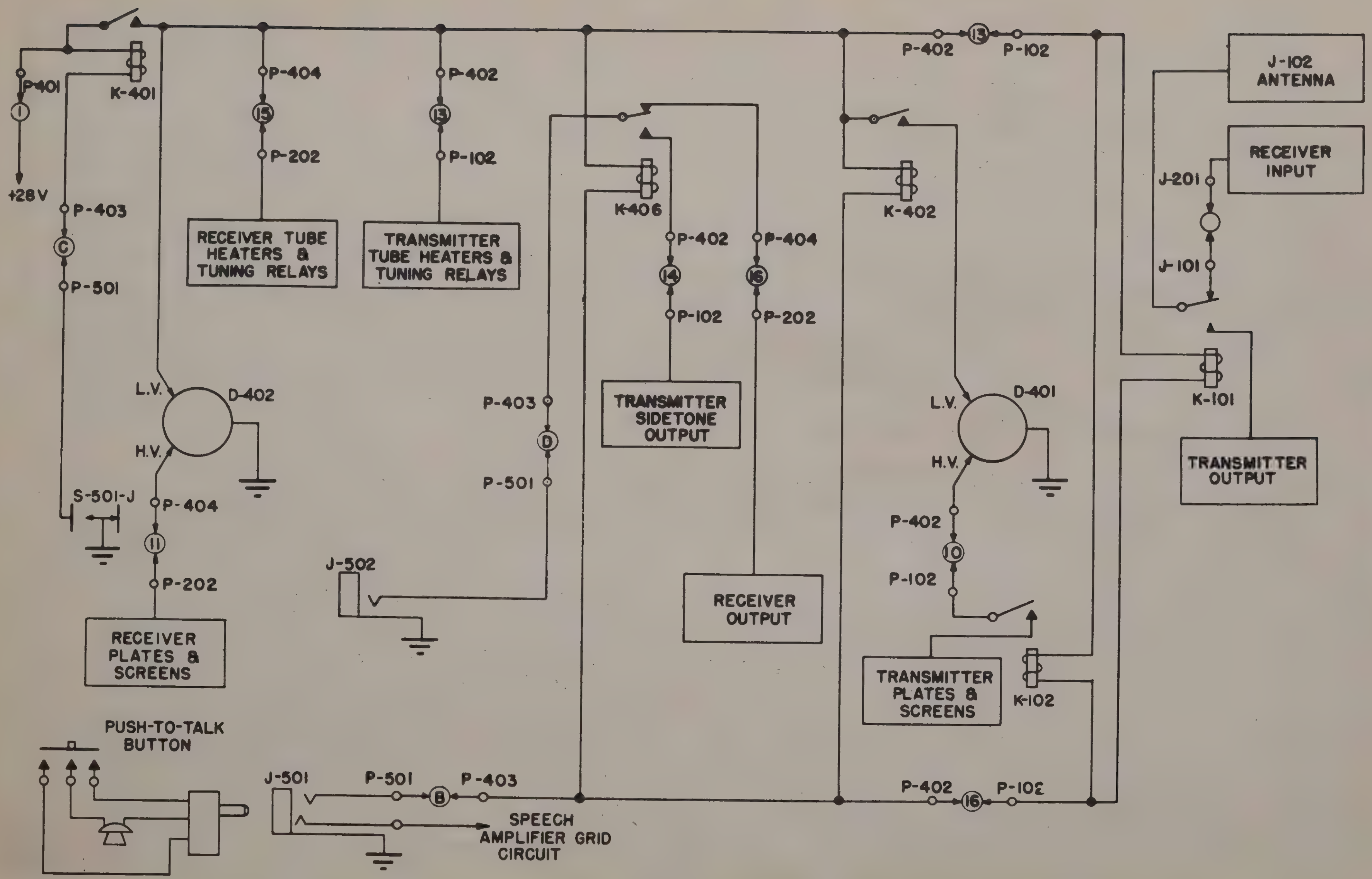

P-401
K-401
+28V
P-403
C
P-501
S-501-J
L.V.
D-402
H.V.
P-404
11
P-202
RECEIVER PLATES & SCREENS
PUSH-TO-TALK BUTTON
P-404
15
P-202
RECEIVER TUBE HEATERS & TUNING RELAYS
P-402
13
P-102
TRANSMITTER TUBE HEATERS & TUNING RELAYS
J-502
P-403
D
P-501
J-501
P-501
B
P-403
SPEECH AMPLIFIER GRID CIRCUIT
K-406
P-402
14
P-102
TRANSMITTER SIDETONE OUTPUT
P-404
16
P-202
RECEIVER OUTPUT
K-402
L.V.
D-401
H.V.
P-402
10
P-102
TRANSMITTER PLATES & SCREENS
K-102
P-402
16
P-102
P-402
13
P-102
J-102 ANTENNA
RECEIVER INPUT
J-201
J-101
K-101
TRANSMITTER OUTPUT

Figure 4-9. Radio Transmitter T-67/ARC-3, T-67A/ARC-3, or T-67B/ARC-3 (Employing Control Box C-118/ARC-3 or C-118A/ARC-3)—Push-to-Talk Circuit

(*i*) Motor stopping switch S-101A, also operated by cam O-101.

(*j*) B+ time delay relay K-118 (for all AN/ARC-3 or AN/ARC-36 Transmitters incorporating the M-3 Modification, all later versions, and for all AN/ARC-49 Transmitters).

(2) CLUTCH-BRAKE ASSEMBLY.—A mechanical description of the clutch-brake assembly follows:

(*a*) Motor B-101, which supplies the power for the tuning assembly, is located on top of the transmitter chassis (see Fig. 6-12) behind the front panel and just to the right of the crystal compartment. To set it in motion push any one of the eight channel-selector push buttons on the control box or if using a control panel place the "ON-OFF" switch in the "ON" position.

(*b*) The shaft of the motor terminates in a worm gear which meshes with a gear on a horizontal drive shaft directly below the chassis. (See fig. 4-10.) A metal housing covers the gears. Figure 4-22 shows this housing removed from the receiver worm gear, which is an identical assembly.

(*c*) The gear shaft is located parallel to the side of the chassis. The shaft end, toward the rear, terminates in a flat metal disc which is covered with a layer of neoprene; this is the driving disc of the clutch assembly. It can be seen in figure 4-22.

(*d*) Directly opposite the face of this driving disc is an identical disc. (See fig. 4-22.) Its face is normally separated from the driving disc by approximately 0.008 of an inch. This is the movable disc of the clutch assembly. It is mounted on the end of a longer shaft, on the same center line as the short worm gear shaft, and is supported by two brackets. The bracket closer to the worm gear is an integral part of the solenoid relay which is fastened to the underside of the chassis. The support towards the rear of the set is a casting. Mounted around the shaft, between these two supports, is a spring. This spring exerts about four pounds pressure on the shaft, pushing it toward the rear of the set. The clutch disc therefore is held tightly against the face of the front bracket, which is faced with a friction disc. This forms an effective braking action on the shaft which cannot then turn until the clutch disc is released.

(*e*) Between the two brackets and adjacent to the rear one is the arm of the solenoid relay. (See fig. 4-22.) It is yoked around the shaft in such a manner that when the relay is energized and its magnetic pull draws the arm toward the front of the set, it moves the shaft to the front, thereby compressing the spring and separating the clutch disc from the facing on the bracket. This releases the brake.

(*f*) The shaft moves the disc away from the bracket far enough that it contacts the friction facing on the driving disc. If the driving disc is being turned by the motor at this time, the clutch disc will also be turned by a friction facing. Thus the shaft on which it is mounted will turn.

(*g*) A coupling at the end of the shaft connects it to a drive shaft and a worm gear mounted on capacitor C-106. This in turn is connected to another worm gear on capacitor C-122 by means of a shaft and two universal couplings. Each worm gear is meshed with a gear which drives two ganged variable capacitors. (See fig. 4-11.) In this way the variable capacitors are driven by the motor when the solenoid is energized.

(*h*) When the tuned circuits reach resonance, the solenoid is released as described in paragraphs 3*b*(3)(*d*)3 and 3*b*(4)(*d*)3, this section. This relieves the compression on the spring and withdraws the clutch disc from the driving disc. The clutch disc is drawn tightly against the friction facing on the bracket. This applies a brake to the shaft and stops the tuning action immediately. Just how this action takes place electrically is described in paragraphs 3*b*(3) and 3*b*(4) this section.

(3) OPERATION OF TUNING CONTROL SYSTEM FOR RADIO TRANSMITTER T-67/ARC-3 or T-312/ARC-36 WITHOUT MODIFICATION M-3.

(*a*) The variable capacitors C-106, C-115, C-122, and C-129 and cam O-101 are driven through the clutch-brake mechanism by motor B-101. (See fig. 4-12.) Operation of the motor is controlled by a pair of contacts on motor relay K-104, which also contains other contacts necessary to the operation of the circuit.

(*b*) The motor relay and clutch-brake mechanism are controlled by a sensitive relay K-103, which is connected in the plate circuit of the JAN-12SH7 tuning control tube V-105. Grid bias for this tube is derived from the grid current in the JAN-832A class C power amplifier tube V-104. This current develops a negative DC voltage across resistor R-124, which is applied to the control tube grid. The action is such that the control tube is biased to cut off whenever grid current is being drawn by the power amplifier tube. This occurs whenever the RF circuits are so tuned that the 18th harmonic of the crystal frequency is fed into the power amplifier. Under this condition the sensitive relay, which has a drop-out current rating of 2.5 milliamperes, is open and the tuning system is at rest.

1. In order to prevent surges of voltage caused by modulation from temporarily removing the bias, the cathode of the control tube is wired through a motor relay back contact to A+. This supplies an additional 28-volt bias for the tube and prevents its operation until the motor relay is closed by the starting relay K-108, as described in paragraph 3*b*(3)(*e*), this section. When the motor relay is closed, the contacts transfer the control tube cathode from A+ to ground, thus removing the locking bias.

2. If, in addition, the harmonic generator circuits are not tuned to produce the 18th harmonic of the crystal frequency, no bias for the control tube is developed and the tube draws about 8 milliamperes of plate current. Under this condition the sensitive relay, which has an operating current of 4 milliamperes, is closed. This holds the motor relay in the energized position. The

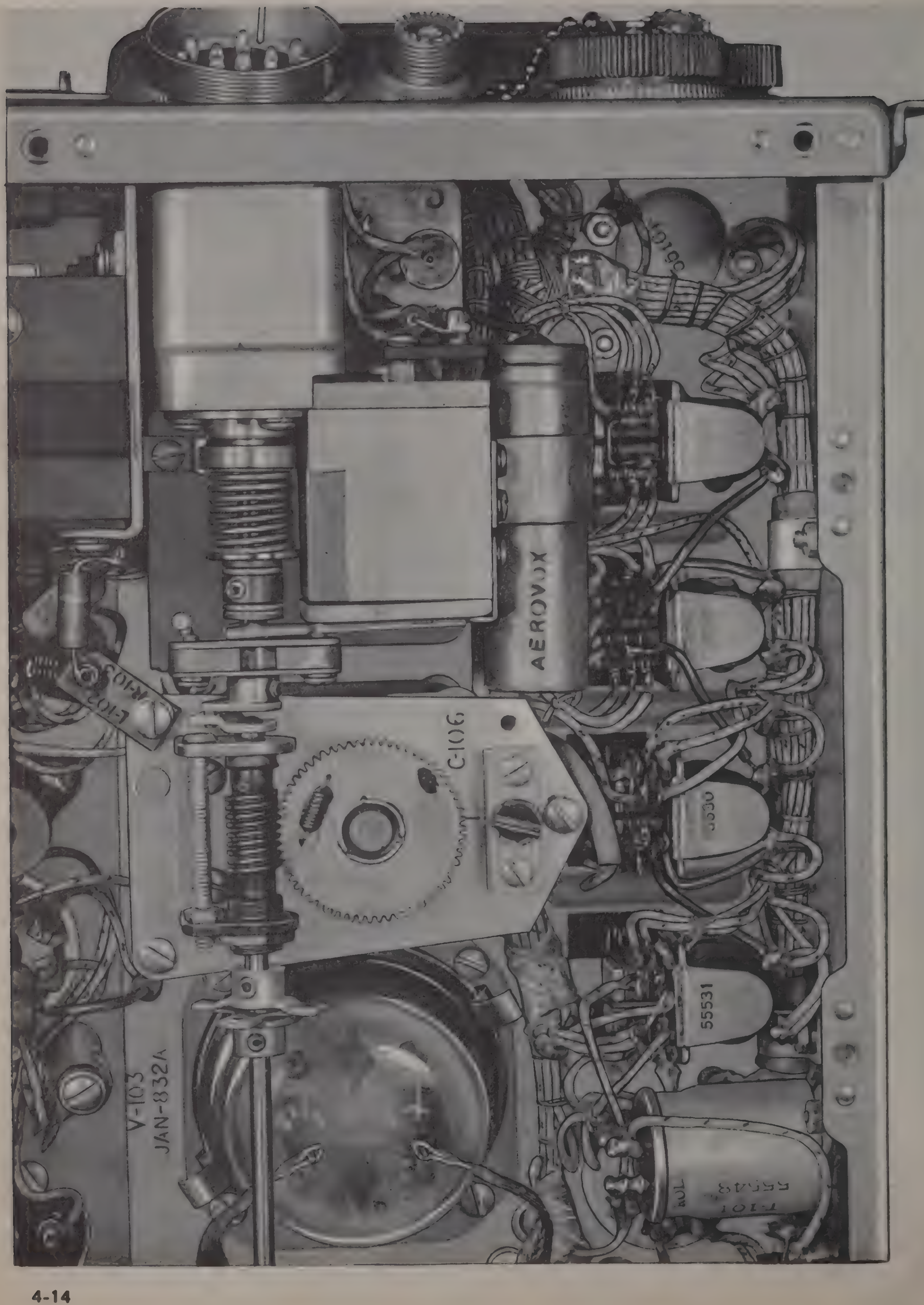

AEROVOX
C-106
V-103
JAN-832A
55531
T-101

Figure 4-10. Radio Transmitter T-67/ARC-3 or T-312/ARC-36. Without Modification M-3—Clutch-Brake Mechanism with Worm Gear Housing in Place

clutch is operated simultaneously with the motor relay. Its action is described in paragraph 3*b*(2), this section.

3. Another contact of the motor relay energizes the tone oscillator relay K-106. This closes the push-to-talk circuit and produces a 1000-cycle audio tone in the headsets as described in paragraph 2*a*(2)(*c*)*1*, this section. (This tone is not applied to the modulator tubes.) Closing of the push-to-talk circuit applies high voltage to the transmitter as described in paragraph 3*a*(2)(*a*), this section. Another set of motor relay contacts (not shown in the figure) shorts the modulator grid. This eliminates the possibility of erratic tuning from tone modulation of the power amplifier grid current.

(*c*) Eight crystal relays, one corresponding to each of the operating channels on the transmitter, connect the selected crystal into the oscillator circuit. The AN/ARC-36 transmitter has available two banks of eight crystals from which any crystal may be connected into the oscillator circuit. Ground connection for any one of the relays is made when the corresponding channel push button on the control box is pressed or when the channel selector switch on the control panel is set to the corresponding channel setting. These relays also contain contacts for operating the starting relays whenever a new channel is selected.

(*d*) The basic operation of the tuning control circuit (see fig. 4-12) is as follows:

1. When a new channel is selected, that crystal to whose harmonic the transmitter has been tuned is disconnected from the circuit and another crystal is connected. At the same time motor relay K-104 is closed by the starting relay. This unlocks the control tube by connecting the cathode to ground and applies high voltage to the transmitter, as described in paragraphs 3*b*(3)(*b*)*1*, *2* and *3*, this section.

2. Since the transmitter circuits are not tuned to the 18th harmonic of the newly selected crystal and no grid current is being drawn by JAN-832A (V-104), and since the 28-volt locking bias on JAN-12SH7 (V-105) was removed by the closing of the motor relay, the control tube draws current and relay K-103 closes. This holds the clutch mechanism and motor relay in an energized position. The motor drives the variable capacitors and changes the frequency to which the transmitter circuits are tuned.

3. When the transmitter is tuned to the 18th harmonic of the new crystal, grid current is drawn by the power amplifier tube JAN-832A (V-104), to apply negative bias to the grid of the control tube JAN-12SH7 (V-105), stop the flow of plate current in this tube, and open relay K-103. This is a fast operating relay which immediately releases clutch K-105, disconnects the variable capacitor shafts from the motor, and applies a brake to the variable capacitor drive shaft. At the same

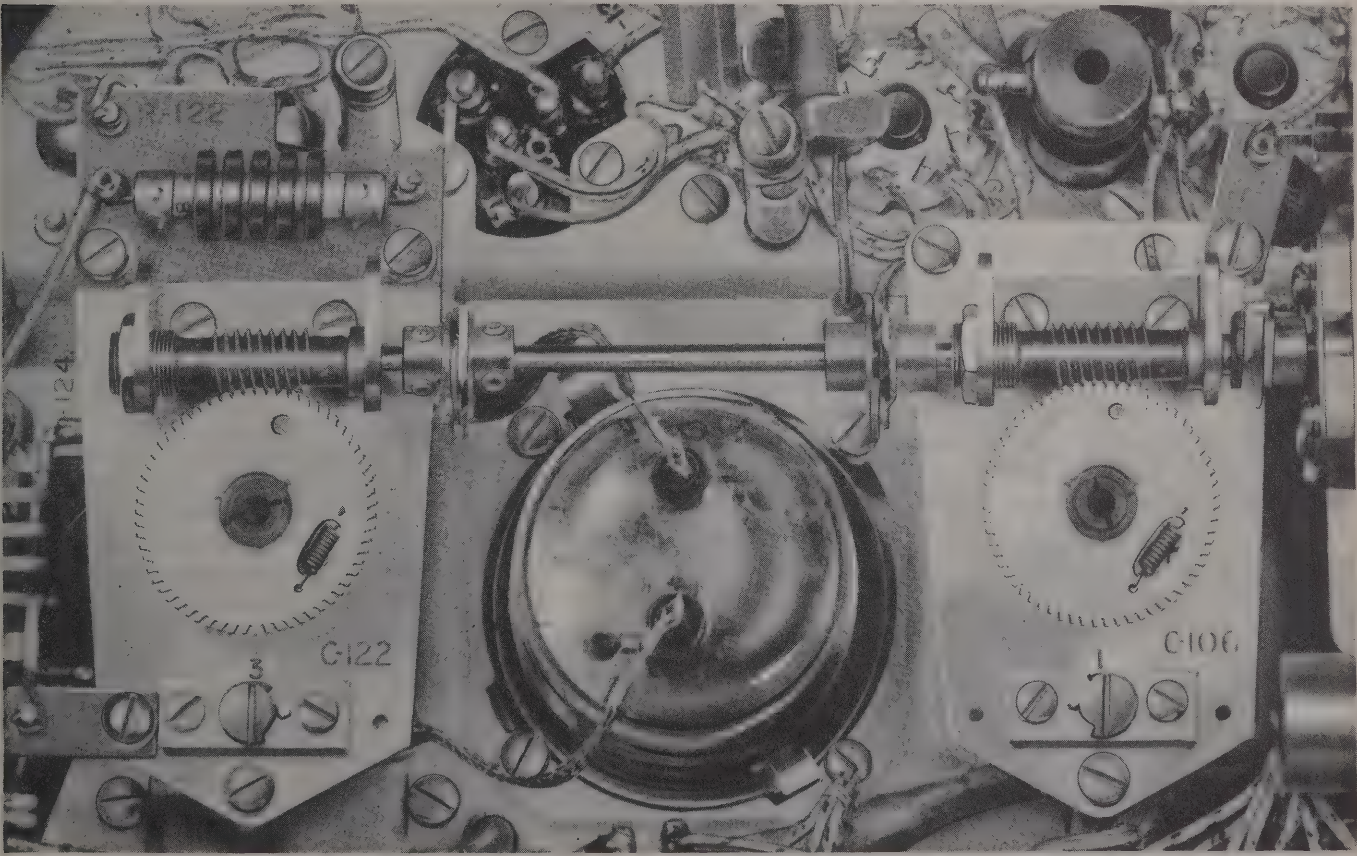


Figure 4-11. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 Without Modification M-3—Drive Shaft and Variable Capacitor Gears

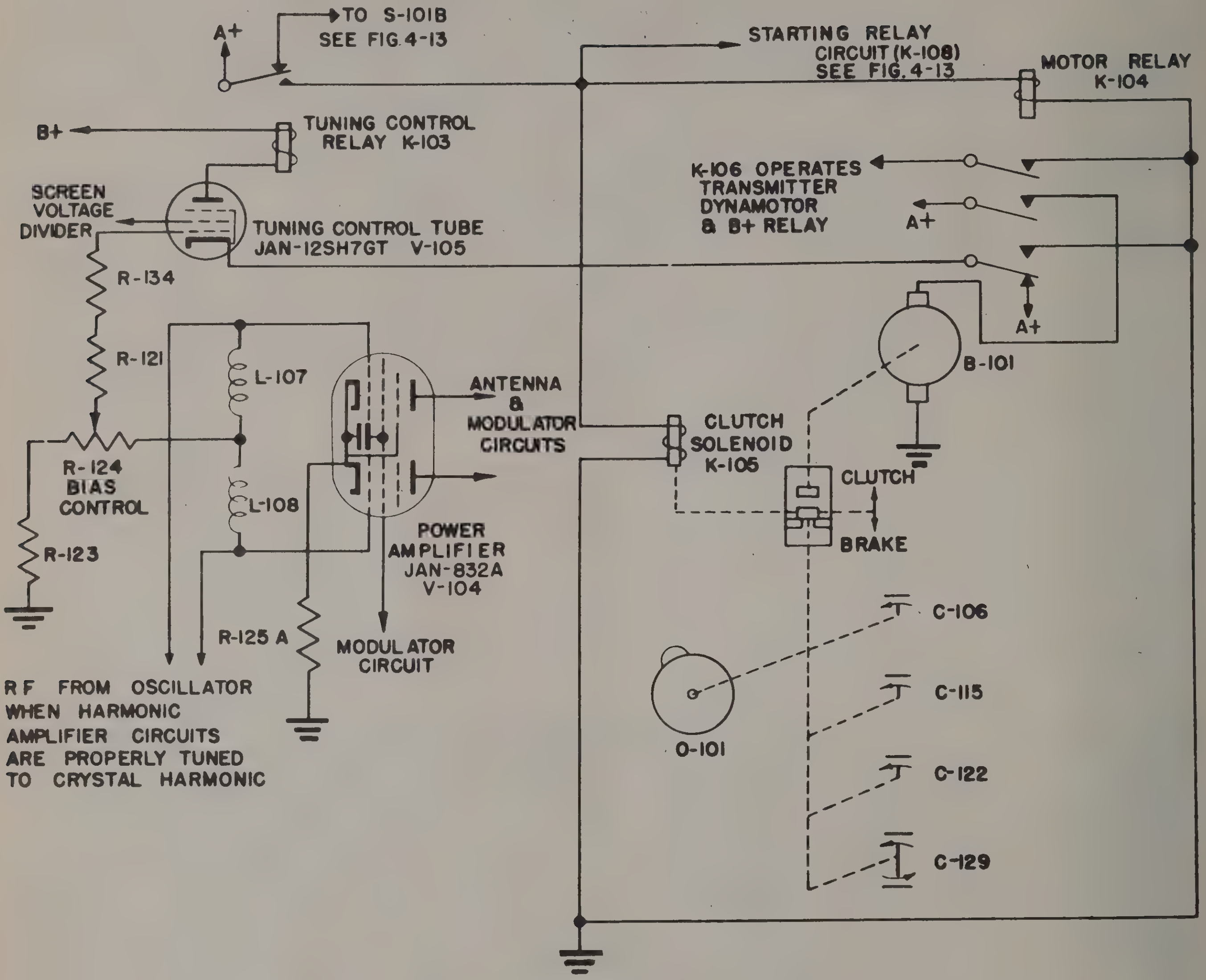

A+
TO S-101B SEE FIG.4-13
STARTING RELAY CIRCUIT (K-108) SEE FIG.4-13
MOTOR RELAY K-104
B+
TUNING CONTROL RELAY K-103
SCREEN VOLTAGE DIVIDER
TUNING CONTROL TUBE JAN-12SH7GT V-105
K-106 OPERATES TRANSMITTER DYNAMOTOR & B+ RELAY
A+
R-134
A+
B-101
R-121
L-107
ANTENNA & MODULATOR CIRCUITS
CLUTCH SOLENOID K-105
CLUTCH
R-124 BIAS CONTROL
L-108
BRAKE
R-123
POWER AMPLIFIER JAN-832A V-104
C-106
R-125 A
MODULATOR CIRCUIT
RF FROM OSCILLATOR WHEN HARMONIC AMPLIFIER CIRCUITS ARE PROPERLY TUNED TO CRYSTAL HARMONIC
C-115
O-101
C-122
C-129

Figure 4-12. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 Without Modification M-3—Basic Tuning Control Circuit

time the motor relay is opened, the motor coasts to a stop. High voltage is removed from the transmitter and the control tube cathode is switched to A+.

(*e*) STARTING RELAYS. (*See figure 4-13.*)—In order to close the motor relay and prevent the transmitter from tuning to spurious responses in the uncalibrated portion of the variable capacitor travel, two relays K-107 and K-108 have been added. These relays operate together, relay K-108 being energized through a contact on relay K-107 whenever relay K-107 is energized. Their operation is as follows:

1. A new channel is selected by pushing the proper button on the control box which automatically releases the previously depressed button, or by changing the channel selector switch on the control panel to a setting corresponding to the desired channel. This removes the ground from the crystal relay associated with the channel on which the equipment was previously being operated and causes the crystal relay to drop out. The crystal relay corresponding to the new channel does not operate since it has no connection to A+ in the actual circuit used.

2. Since all eight crystal relays are now open, a connection is made from one side of starting relay K-107 to A+ through a series of back contacts on the eight crystal relays. The other side of relay K-107 is connected to ground. Relay K-107 is now energized and operates relay K-108.

3. After relay K-107 is energized, one of its own contacts connects it to A+ through locking switch, S-101B, thus shorting out the chain of contacts through the crystal relays. Another contact shorts the motor

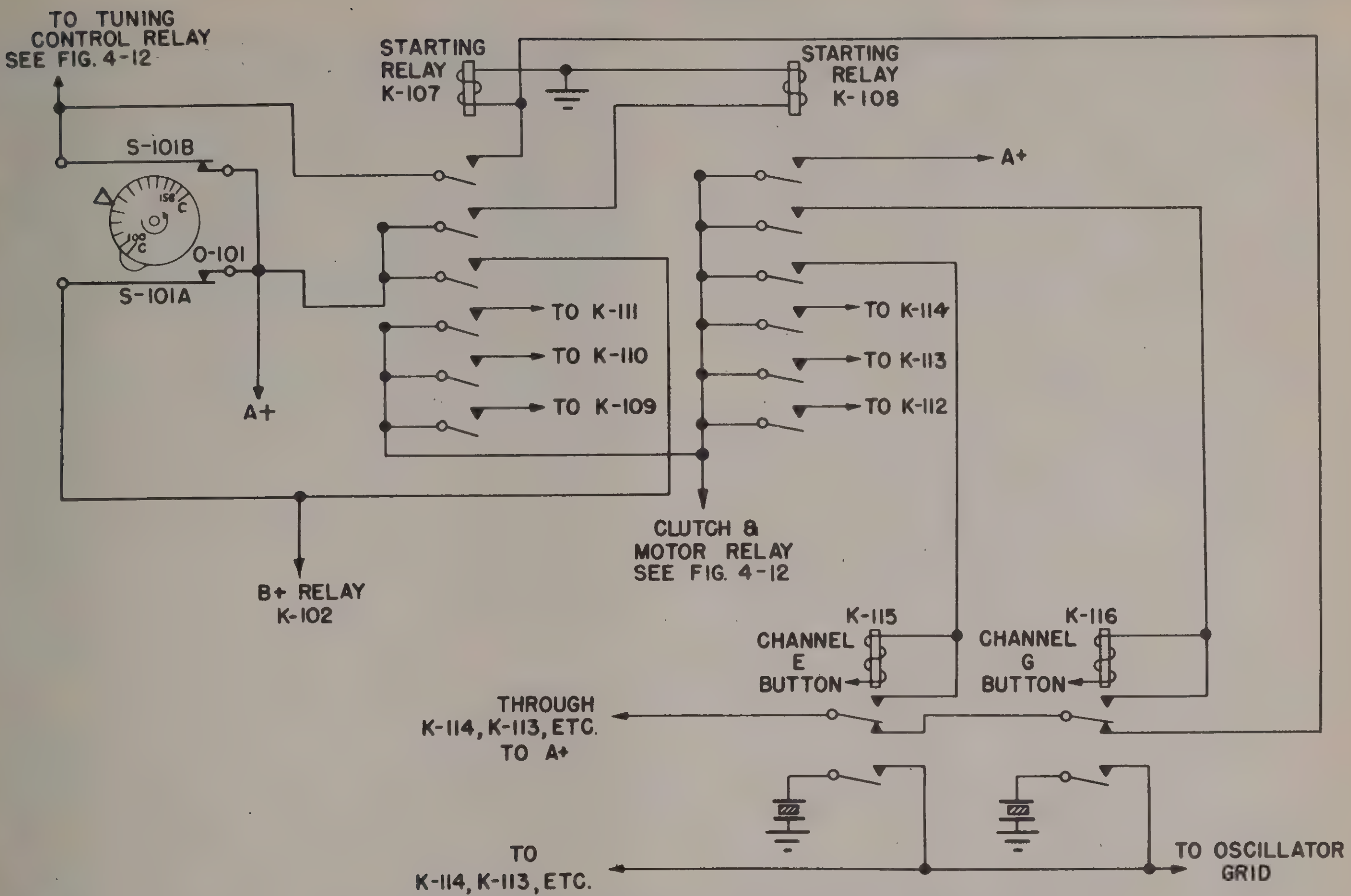


Figure 4-13. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 Without Modification M-3—Starting Relay Circuit

stopping switch S-101A and prevents the motor from stopping, as described in paragraph 3*b*(3)(*f*)*1*, this section.

4. A contact on relay K-108 operates the clutch brake mechanism and the motor relay, setting the tuning system in operation and allowing the basic tuning control circuit to operate as described in paragraph 3*b*(3)(*d*), above. Three of the remaining contacts of relay K-107 and the five remaining contacts of relay K-108 connect A+ to all of the crystal relays. The crystal relay which has been connected to ground through the pushed control box button or through the channel switch on the control panel closes. This connects the proper crystal into the oscillator grid circuit. At the same time, the series path which originally connected relay K-107 to A+ is broken by the opening of the back contact, and the crystal relay which has closed is connected to A+ through its own contact which is a part of this same series path. Relay K-107 does not open because it is still connected to A+ through its own contact and switch S-101B. The motor relay and clutch are held in an energized position by relay K-108, which keeps the tuning system in motion.

5. Cam O-101, which is driven by the motor, is located on top of variable capacitor C-115. The upper face is calibrated to indicate frequency. (See fig. 4-13.) At one point along the circumference there is a small projection. As the cam enters the uncalibrated portion of its travel, this projection strikes an extended arm on switch S-101A and pushes it to one side. This separates the contacts of the switch until the projection has rotated past. This has no electrical effect, since the switch contacts are shorted by a contact on relay K-107. As the cam again enters the calibrated portion of its travel, it opens switch S-101B, located on the opposite side of the cam. This momentarily removes the A+ connection from relay K-107 and causes it to open. Since its contact opens, the relay now has no connection to A+ and cannot close again. Relay K-108 also opens and remains open.

6. The motor relay and clutch mechanism remain actuated by the relay K-103, which has closed in the meantime. The variable capacitors continue to rotate until the transmitter circuits are tuned to the 18th harmonic of the crystal frequency. At this point the sensitive relay opens as described in paragraph 3*b*(3)(*d*)*3*, this section. The clutch is released, the motor stops, and the transmitter is tuned to the desired frequency. It is ready for operation on the designated channel whenever the push-to-talk button on the microphone is depressed. The calibration on cam O-101 indicates the frequency to which the transmitter is tuned. The position of the opening of switches S-101A and S-101B is indicated by the letters "C" on the calibrated cam.

(*f*) MOTOR STOPPING SWITCH S-101A. (*See figure 4-13.*)—If the crystal in the selected channel should be defective, or if a channel happened to be selected in which no crystal was connected, the motor would ordinarily run indefinitely and suffer possible damage, since no grid current would ever be developed in the power amplifier and the sensitive relay could not open. In order to prevent this, motor stopping switch S-101A, which is also actuated by cam O-101, is provided. Its operation is as follows:

1. Switch S-101A is momentarily opened as the variable capacitor is leaving the calibrated portion of its travel. The opening of this switch has no effect during the normal tuning operation, since it is shorted by a contact on relay K-107, which is always energized by S-101B at this point. In the travel of the cam however, if relay K-107 has been released by the opening of switch S-101B and the variable capacitor is tuned through the entire calibrated portion of its travel without being stopped, indicating that no signal has reached the power amplifier grid, switch S-101A is opened.

2. Since under this condition relay K-107 is also open, the B+ relay K-102 is disconnected from A+ by switch S-101A. Relay K-102 opens, removing B+ from the transmitter. The flow of plate current in the control tube is then stopped and relay K-103 opens, thereby releasing the clutch and stopping the motor. It is impossible now to apply B+ to the transmitter by using the push-to-talk button until another operating channel is selected.

(*g*) STARTING FROM "OFF" POSITION.—When first turning on the equipment, it is essential that the tubes be warmed up and in operation before the control tube operates, in order to prevent possible mistuning. To provide sufficient delay in heating the control tube filament relays K-403 and K-404 have been incorporated in the power junction box. Relay K-403 is connected in the B+ line of the transmitter. The control tube filament is not connected to A+ until relay K-404 is closed.

1. When the other tubes are sufficiently heated to draw full plate current, relay K-403 closes. The closing of its contacts energizes relay K-404. (See fig. 4-14.)

a. One contact of this relay connects it directly to A+, locking it in the operated position as long as the equipment remains on. The same contact connects the control tube filament to A+ allowing it to start heating.

b. A second contact shorts relay K-403 in order to remove the voltage drop through it.

2. During the warm-up period locking switch S-101B is shorted by a back contact of sensitive relay K-103. (See fig. 4-12 and 4-13.) This prevents the starting relays from being released until the control tube has warmed up sufficiently to operate the sensitive relay.

3. By this system the control tube is not permitted to start heating until all the other tubes in the equipment are warm, thus insuring that the RF tubes

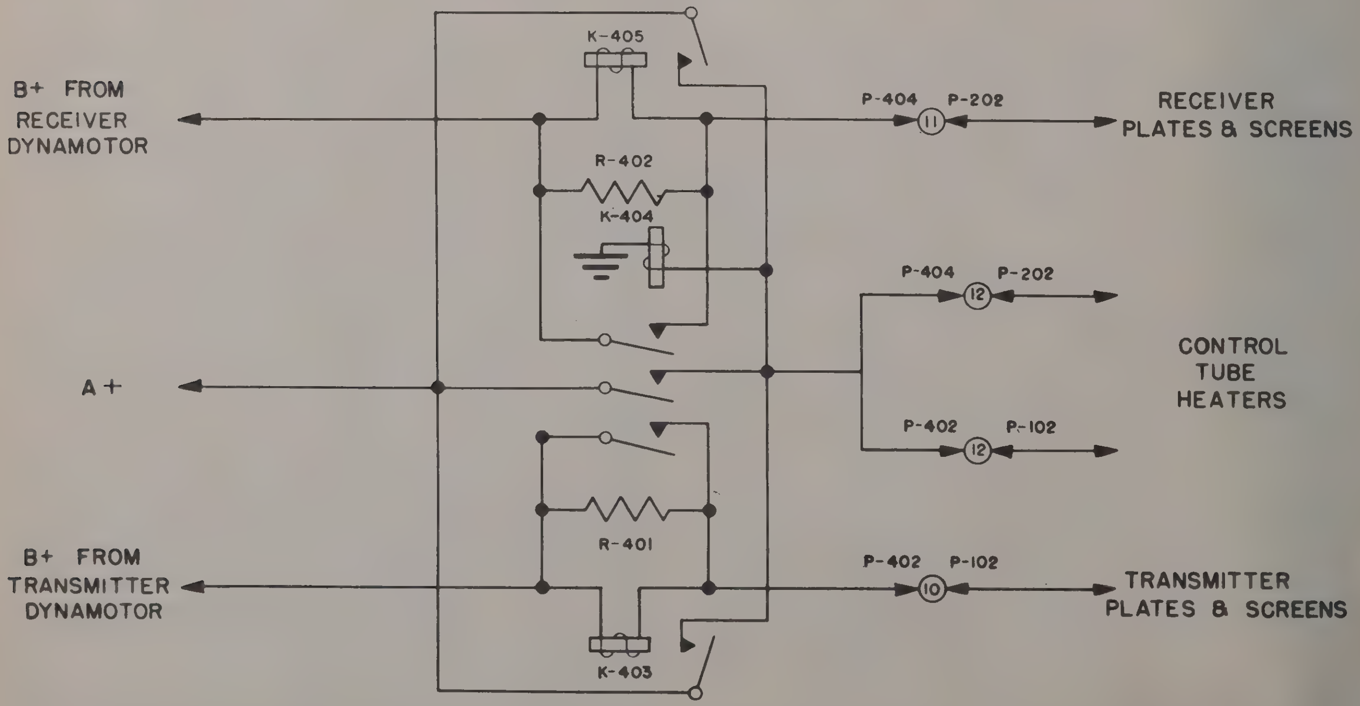

K-405
B+ FROM RECEIVER DYNAMOTOR
P-404
P-202
11
RECEIVER PLATES & SCREENS
R-402
K-404
P-404
P-202
12
CONTROL TUBE HEATERS
A+
P-402
P-102
12
R-401
B+ FROM TRANSMITTER DYNAMOTOR
P-402
P-102
10
TRANSMITTER PLATES & SCREENS
K-403

Figure 4-14. Radio Transmitter and Radio Receiver—Time Delay, Located in Power Junction Box J-68/ARC-3 or J-68A/ARC-3

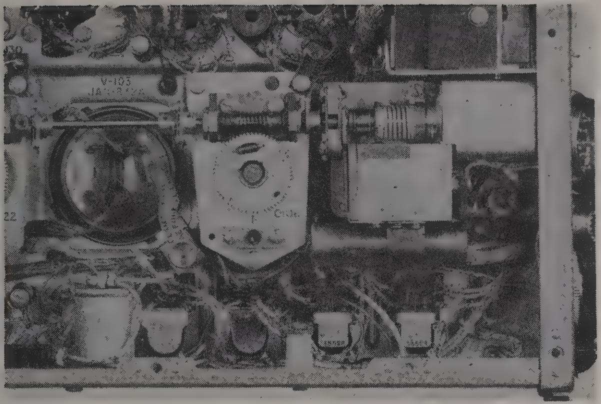


Figure 4-15. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 With Modification M-3, T-67A/ARC-3, T67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36—Capacitor Drive Assembly

are operating before the control tube. This is necessary to prevent improper operation of the automatic tuning system.

(4) OPERATION OF TUNING CONTROL SYSTEM FOR RADIO TRANSMITTER T-67/ARC-3 or T-312/ARC-36 WITH MODIFICATION M-3 AND RADIO TRANSMITTER T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49.

(*a*) The variable capacitors C-106, C-115, C-122, and C-129 and Cam O-101 are driven through the clutch-brake mechanism by motor B-101. (See fig. 4-16 or 4-17.) Operation of the motor is controlled by a pair of contacts on motor relay K-104, which also contains other contacts necessary to the operation of the circuit.

(*b*) The motor relay and clutch-brake mechanism are controlled by a sensitive relay K-103, which is connected in the plate circuit of the JAN-12SH7 tuning control tube V-105. Grid bias for this tube is derived from the grid current in the JAN-832A class C power amplifier tube V-104. This current develops a negative DC voltage across resistor R-124, which is applied to the control tube grid. The action is such that the control tube is biased to cut off whenever grid current is being drawn by the power amplifier tube. This occurs whenever the RF circuits are so tuned that the 18th harmonic of the crystal frequency is fed into the power amplifier. Under this condition the sensitive relay, which has a drop-out current rating of 2.5 milliamperes, is open and the tuning system is at rest.

1. To prevent surges of voltage caused by modulation from temporarily removing the bias, the cathode of control tube V-105 is wired in series with resistor R-150 through a motor relay back contact to A+. This supplies an additional 28-volt bias for the tube and prevents its operation until the cathode and grid are grounded by relay K-117, as described in paragraph 3*b*(4)(*d*), this section. When K-117 is closed, the contacts ground the cathode and grid of the control tube, thus removing all locking bias.

2. Another set of contacts of K-117 breaks K-102 from the push-to-talk circuit and places a ground on the remainder of the push-to-talk circuit. The control tube draws current through the sensitive relay, which closes. The sensitive relay closes the motor relay and clutch K-105. The action of the clutch is described in paragraph 3*b*(2), this section. When the motor relay closes, the original cathode connection of the control tube is transferred from A+ to ground so the tube will continue to draw current after K-117 has opened.

3. Another contact of the motor relay energizes the tone oscillator relay K-106. This closes, K-102, applying high voltage to the plates and screens of the tubes and producing a 1000-cycle tone in the headsets as described in paragraph 2*a*(2)(*c*)1, this section. This tone is not applied to the modulator tubes as another set of motor relay contacts (not shown in figure) shorts the modulator grid. This eliminates the possibility of erratic tuning from tone modulation of the power amplifier grid circuit.

(*c*) On the AN/ARC-3 or AN/ARC-36 equipment eight crystal relays, one corresponding to each of the operating channels on the transmitter, connect the selected crystal into the oscillator circuit. The AN/ARC-36 transmitter has available two banks of eight crystals from which any crystal may be connected into the oscillator circuit. Ground connection for any one of the relays is made when the corresponding channel push button on the control box is pressed, or when the channel selector switch on the control panel is set to the corresponding channel setting. These relays also contain contacts for operating the starting relays whenever a new channel is selected.

For Radio Transmitter T-452/ARC-49, two rotary solenoid switches, one with four banks of twelve crystals and the other with a crystal bank selector, are used to select and complete the connecting of a crystal to the oscillator grid circuit. These rotary solenoid switches also contain contacts for operating the starting relay K-108.

(*d*) The basic operation of the tuning control circuit (see fig. 4-16 or 4-17) is as follows:

1. When a new channel is selected, the crystal to whose harmonic the transmitter has been tuned is disconnected from the circuit and another crystal is connected. At the same time, relay K-117 has been closed by K-108. This unlocks the control tube by connecting the cathode and grid to ground and applies high voltage as described in paragraphs 3*b*(4)(*b*)*1*, *2*, and *3*, this section.

2. Since the grid and cathode of the control tube are grounded and high voltage is applied, the tube draws plate current, closing K-103. This energizes the clutch mechanism and motor relay. The motor drives the variable capacitor and changes the frequency to which the transmitter circuits are tuned. Cam O-101 passes and opens S-101A but nothing happens because S-101A is shorted by contacts of K-107 which is closed. The motor continues to drive the condensers through the uncalibrated portion of the cam.

a. For Radio Transmitter T-67/ARC-3 or T-312/ARC-36 with modification M-3: The cam momentarily opens S-101B which causes K-107, K-108 and K-117 to relax, but the motor continues to run because the control tube is still drawing plate current and holding K-103 closed. While the motor is running, K-118 is relaxed, connecting K-102 to the push-to-talk circuit, thus maintaining continuity of the push-to-talk circuit during the short interval while K-117 is relaxing.

b. For Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49: The cam first closes the normally open contact of S-101B, but nothing happens, since this contact is shorted out through the energized contact of relay K-103, and the switch S-101A. The cam continues on to open the normally closed contact of switch S-101B. This causes K-107, K-108 (except in T-452/ARC-49), and K-117 to relax, but the motor continues to run because the control tube is still drawing plate current and holding K-103 closed. While the motor is running, K-118 is relaxed, connecting K-102 to the push-to-talk circuit, thus maintaining continuity of the push-to-talk circuit during the short interval while K-117 is relaxing.

3. When the transmitter is tuned to the 18th harmonic of the new crystal, grid current is drawn by the power amplifier tube JAN-832A (V-104), to apply negative bias to the grid of the control tube JAN-12SH7 (V-105), stop the flow of the plate current in this tube, and open relay K-103. This is a fast operating relay which immediately releases clutch K-105, disconnects the variable capacitor shafts from the motor, and applies a brake to the variable capacitor drive shaft. At the same time the motor relay is opened, the motor coasts to a stop. High voltage is removed from the transmitter and

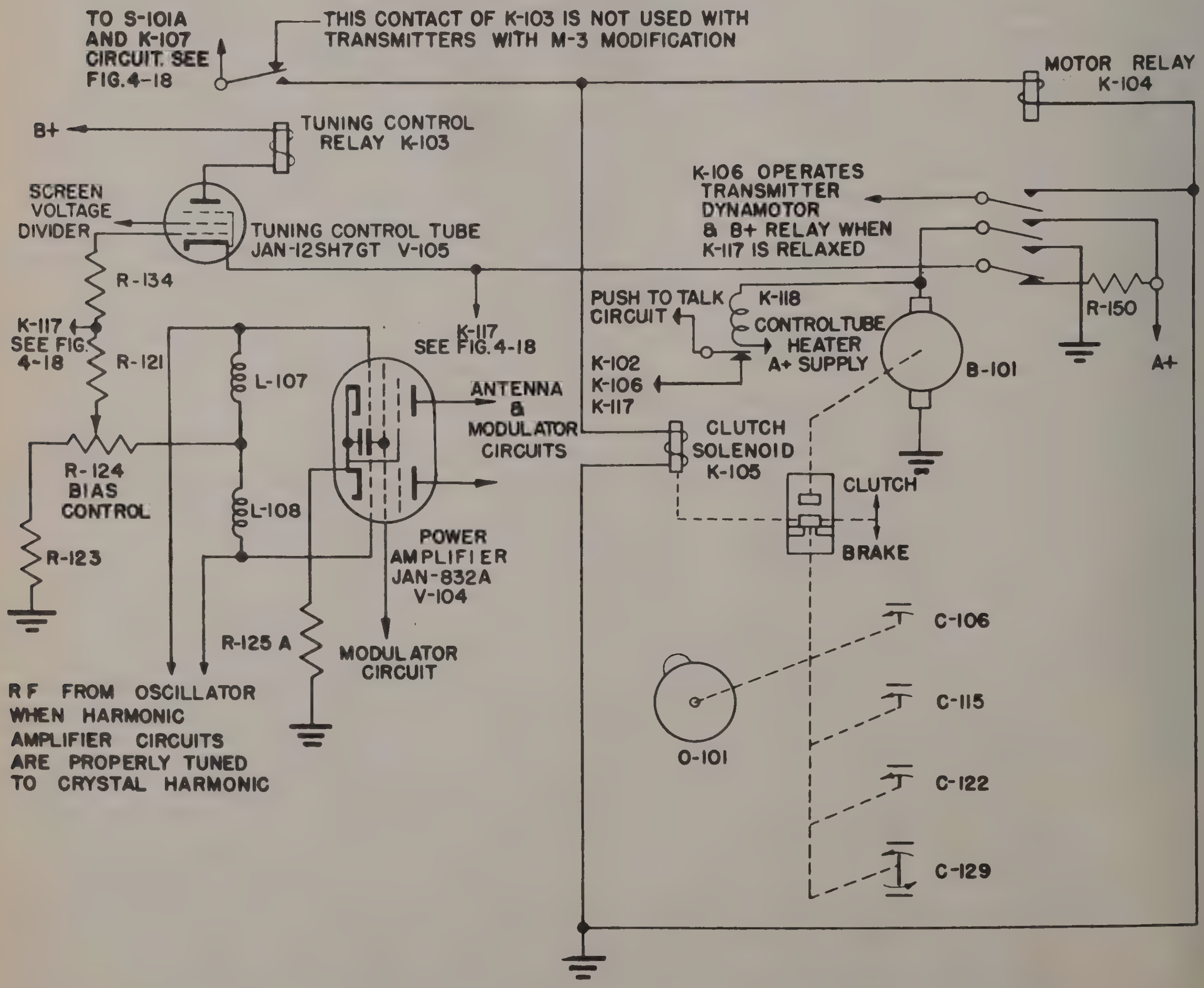

TO S-101A
AND K-107
CIRCUIT. SEE
FIG.4-18
THIS CONTACT OF K-103 IS NOT USED WITH
TRANSMITTERS WITH M-3 MODIFICATION
MOTOR RELAY
K-104
B+
TUNING CONTROL
RELAY K-103
SCREEN
VOLTAGE
DIVIDER
TUNING CONTROL TUBE
JAN-12SH7GT V-105
K-106 OPERATES
TRANSMITTER
DYNAMOTOR
& B+ RELAY WHEN
K-117 IS RELAXED
R-134
K-117
SEE FIG.
4-18
R-121
K-117
SEE FIG. 4-18
L-107
ANTENNA
&
MODULATOR
CIRCUITS
PUSH TO TALK
CIRCUIT
K-118
CONTROL TUBE
HEATER
A+ SUPPLY
K-102
K-106
K-117
B-101
R-150
A+
R-124
BIAS
CONTROL
L-108
CLUTCH
SOLENOID
K-105
CLUTCH
BRAKE
R-123
POWER
AMPLIFIER
JAN-832A
V-104
R-125 A
MODULATOR
CIRCUIT
C-106
C-115
C-122
C-129
O-101
RF FROM OSCILLATOR
WHEN HARMONIC
AMPLIFIER CIRCUITS
ARE PROPERLY TUNED
TO CRYSTAL HARMONIC

Figure 4-16. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 With Modification M-3—Basic Tuning Control Circuit

the control tube cathode is switched to A+.

(*e*) STARTING RELAYS. (*See fig. 4-18, 4-19 or 4-20.*)—To prepare the transmitter for the selection of a new channel and to prevent the transmitter from tuning to spurious responses in the uncalibrated portion of the variable capacitor travel, three relays K-107, K-108, and K-117 have been added. These relays operate together, relay K-117 being energized by a contact on relay K-108 which is energized by a contact on relay K-107 when K-107 is energized. Their operation is as follows:

1. FOR RADIO TRANSMITTER T-67/ARC-3 or T-312/ARC-36 WITH MODIFICATION M-3 AND RADIO TRANSMITTER T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36.

a. A new channel is selected by pushing the proper button on the control box which automatically releases the previously depressed button, or by changing the channel selector switch on the control panel to a setting corresponding to the desired channel. This removes the ground from the crystal relay associated with the channel on which the equipment was previously being operated and causes the crystal relay to drop out. The crystal relay corresponding to the new channel does not operate since it has no connection to A+ in the actual circuit used.

b. Since all eight crystal relays are now open, a connection is made from one side of starting relay K-107 to A+ through a series of back contacts on the eight crystal relays. The other side of relay K-107 is connected to ground. Relay K-107 is now energized and operates relay K-108, which operates K-117.

c. After relay K-107 is energized, one of its own contacts connects it to A+ through locking switch, S-101B, thus shorting out the chain of contacts through the crystal relays. Another contact shorts the motor stopping switch S-101A and prevents the motor from

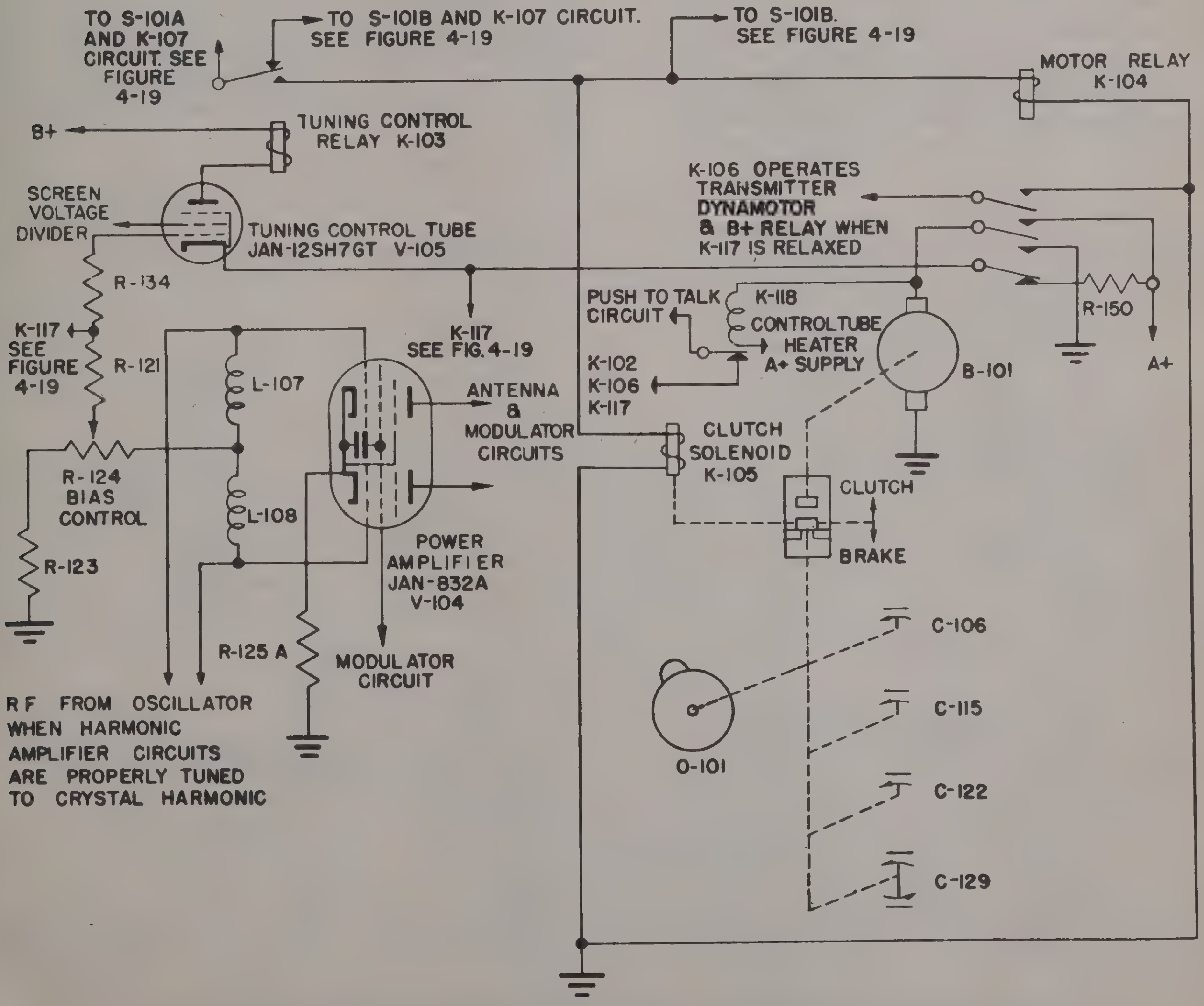

TO S-101A AND K-107 CIRCUIT. SEE FIGURE 4-19
TO S-101B AND K-107 CIRCUIT. SEE FIGURE 4-19
TO S-101B. SEE FIGURE 4-19
MOTOR RELAY K-104
B+
TUNING CONTROL RELAY K-103
SCREEN VOLTAGE DIVIDER
TUNING CONTROL TUBE JAN-12SH7GT V-105
K-106 OPERATES TRANSMITTER DYNAMOTOR & B+ RELAY WHEN K-117 IS RELAXED
R-134
K-117 SEE FIGURE 4-19
R-121
L-107
K-117 SEE FIG. 4-19
ANTENNA & MODULATOR CIRCUITS
PUSH TO TALK CIRCUIT
K-118
CONTROL TUBE HEATER A+ SUPPLY
K-102 K-106 K-117
B-101
R-150
A+
R-124 BIAS CONTROL
L-108
CLUTCH SOLENOID K-105
CLUTCH
BRAKE
R-123
POWER AMPLIFIER JAN-832A V-104
R-125 A
MODULATOR CIRCUIT
C-106
C-115
C-122
C-129
O-101
RF FROM OSCILLATOR WHEN HARMONIC AMPLIFIER CIRCUITS ARE PROPERLY TUNED TO CRYSTAL HARMONIC

Figure 4-17. Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36—Basic Tuning Control Circuit

stopping, as described in paragraph 3*b*(4)(*f*)*1*, this section.

(*1*) For Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36: Should cam O-101 be resting on switch S-101B before the transmitter is turned on, the normally open contact of switch S-101B will be closed, connecting A+ to the motor relays K-104 and K-105, when the transmitter is again turned on. This will cause the motor to drive cam O-101 off switch S-101B and stop as soon as this contact of switch S-101B is closed. The starting sequence will then return to that already described. This insures the transmitter always starting no matter where it was tuned when turned off.

d. Three of the remaining contacts of relay K-107 and the five remaining contacts of relay K-108 connect A+ to all of the crystal relays. The crystal relay, which has been connected to ground through the pushed control box button or through the channel switch on the control panel, closes. This connects the proper crystal into the oscillator grid circuit. At the same time, the series path, which originally connected relay K-107 to A+, is broken by the opening of the back contact; and the crystal relay, which has closed, is connected to A+ through its own contact, which is part of the same series path. Relay K-107 does not open because it is still connected to A+ through its own contact and switch S-101B. Relay K-117 has shorted the control-tube grid and cathode to ground and closes the push-to-talk circuit which applies high voltage. This causes the control tube to close K-103, which operates the clutch and motor relay, causing the tuning system to go into motion.

e. Cam O-101, which is being driven by the motor, is located on top of Variable Capacitor C-115. The upper face is calibrated to indicate frequency. (See fig. 4-16 or 4-17.) At one point along the circumference there is a small projection. As the cam enters the uncalibrated portion of its travel, this projection strikes an extended arm on switch S-101A and pushes it to one side. This separates the contacts of the switch until the projection has rotated past. This has no electrical effect, since the switch contacts are shorted by a contact on relay K-107.

(*1*) For Radio Transmitter T-67/ARC-3 or T-312/ARC-36 with modification M-3: As the cam again enters the calibrated portion of its travel, it opens switch S-101B, located on the opposite side of the cam. This momentarily removes the A+ connection from relay K-107 and causes it to open. Since its contact opens, the relay now has no connection to A+ and cannot close again. Relays K-108 and K-117 also open and remain open.

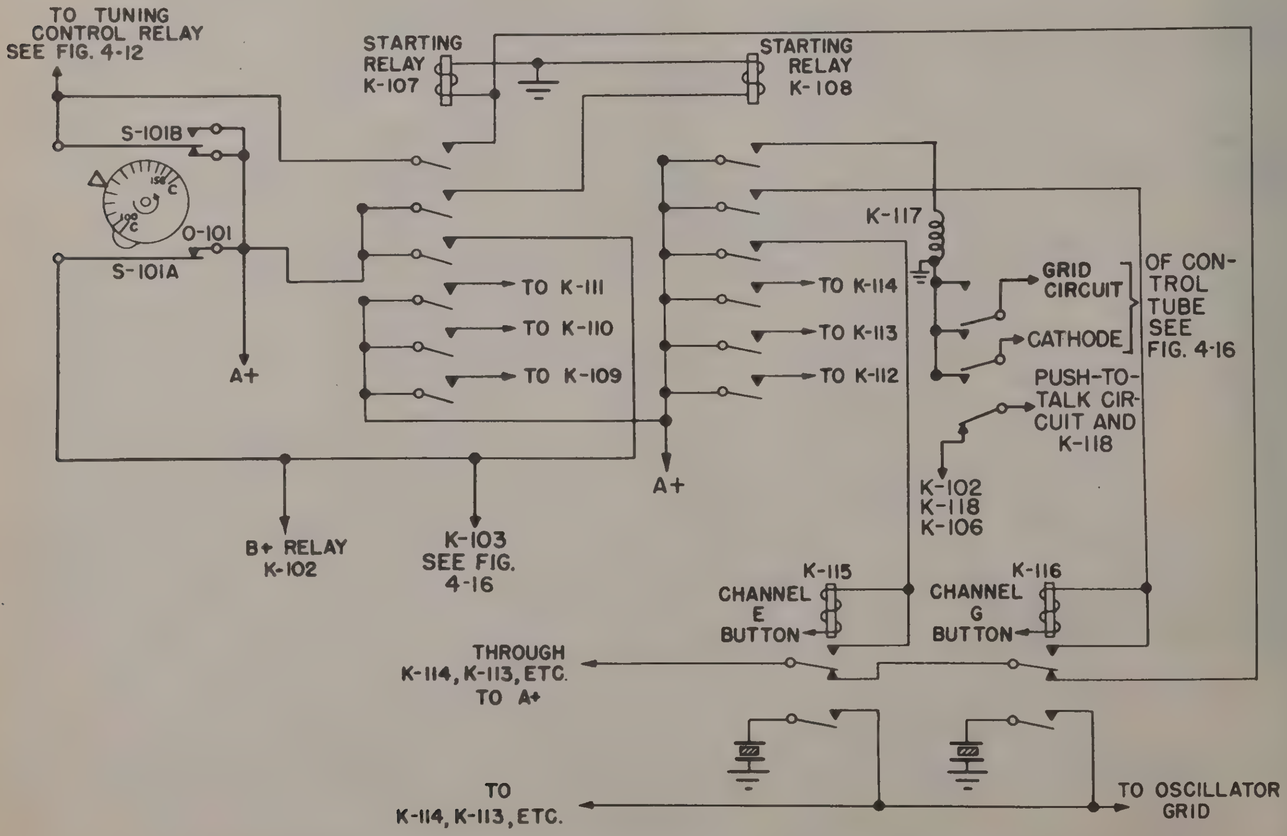

TO TUNING CONTROL RELAY SEE FIG. 4-12
STARTING RELAY K-107
STARTING RELAY K-108
S-101B
O-101
S-101A
A+
TO K-111
TO K-110
TO K-109
K-117
TO K-114
TO K-113
TO K-112
GRID CIRCUIT
CATHODE
OF CONTROL TUBE SEE FIG. 4-16
PUSH-TO-TALK CIRCUIT AND K-118
K-102
K-118
K-106
A+
B+ RELAY K-102
K-103 SEE FIG. 4-16
K-115
CHANNEL E BUTTON
K-116
CHANNEL G BUTTON
THROUGH K-114, K-113, ETC. TO A+
TO K-114, K-113, ETC.
TO OSCILLATOR GRID

Figure 4-18. Radio Transmitter T-67/ARC-3 or T-312/ARC-36 With Modification M-3—Starting Relay Circuit

(*2*) For Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, or T-312B/ARC-36: As the cam again re-enters the uncalibrated portion of its travel, it closes the normally open contacts of switch S-101B, but has no electrical effect since its contacts are shorted by the energized contacts of relay K-103 and switch S-101A. As the cam progresses it opens the normally closed contacts of switch S-101B momentarily removing the A+ connection from relay K-107 and causes it to open. Since its contact opens, the relay now has no connection to A+ and cannot close again. Relays K-108 and K-117 also open and remain open.

f. The motor relay and clutch mechanism remain actuated by the relay K-103. The variable capacitors continue to rotate until the transmitter circuits are tuned to the 18th harmonic of the crystal frequency. At this point the sensitive relay opens as described in paragraph 3*b*(4)(*d*)*3*, this section. The clutch is released, the motor stops, and the transmitter is tuned to the desired frequency. It is ready for operation on the designated channel whenever the push-to-talk button on the microphone is depressed. The calibration on cam O-101 indicates the frequency to which the transmitter is tuned. The position of the opening of switches S-101A and S-101B is indicated by the letters "C" on the calibrated cam.

2. FOR RADIO TRANSMITTER T-452/ARC-49.

a. When a new channel is selected on the Control, Radio Set C-1400/ARC-49, ground is supplied to motors B-102 and B-103 through one or more of the control wires that connect to the control wafer (Wafer No. 1) of the motor-switch assemblies. The application of this ground causes the motors to rotate their associated switches in 30° steps in a clockwise manner until an open circuit condition is reached. (See fig. 4-20.) This open circuit position is a unique condition, i.e. there is only one position at which the motor ground is opened. This position corresponds to the Channel setting on the Control, Radio Set.

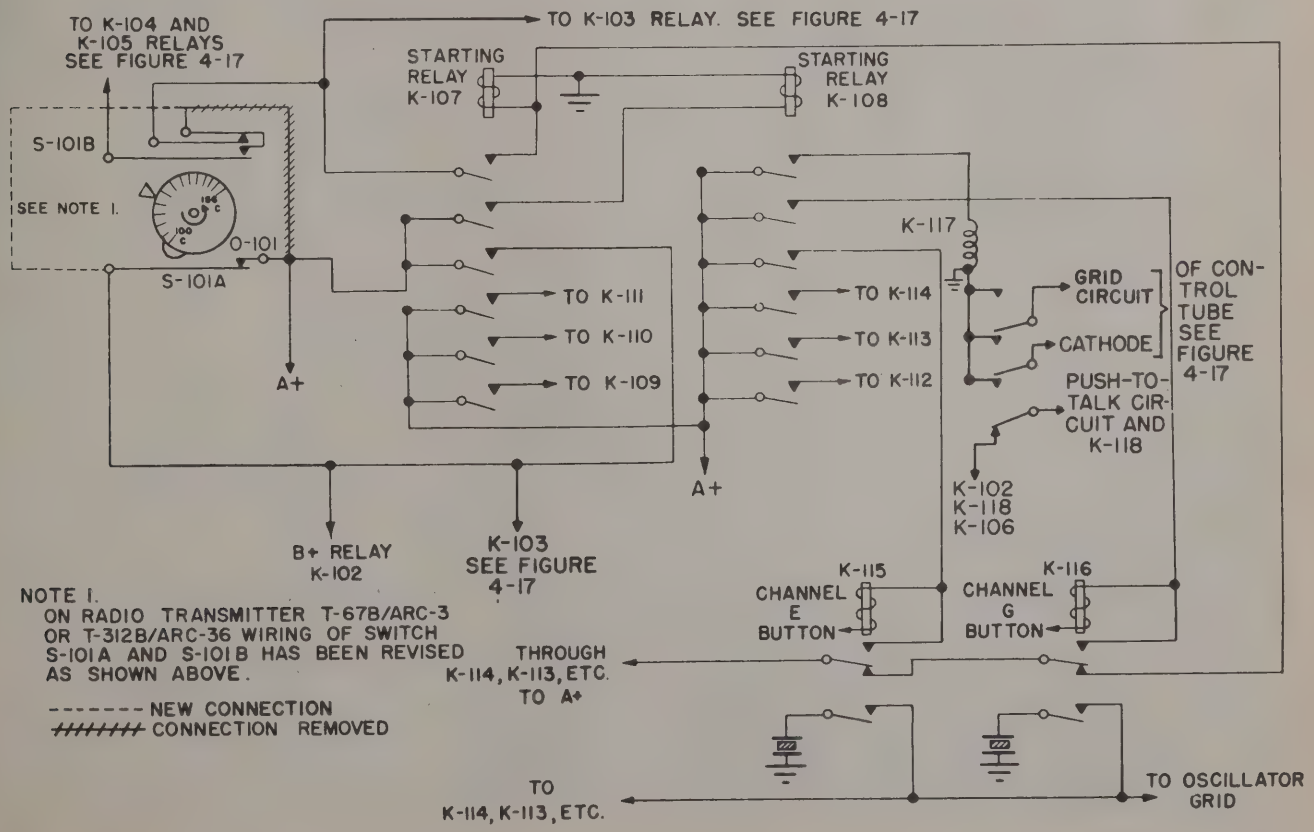
b. The following functions are performed by the selector switches associated with motors B-102 and B-103.

(*1*) S-105C Rear, in conjunction with either S-104D, S-104E, S-104F or S-104G connects the desired crystal to the grid circuit of the oscillator.

(*2*) S-104C Front or S-105C Front, while rotating, opens the ground connection on Relay K-108 momentarily, thus causing it to relax.

c. Relay Sequences.

(*1*) Relay K-108, in the relaxed condition applies A+ to relay K-107 thus energizing it.


TO K-103 RELAY. SEE FIGURE 4-17
TO K-104 AND K-105 RELAYS SEE FIGURE 4-17
STARTING RELAY K-107
STARTING RELAY K-108
S-101B
SEE NOTE 1.
O-101
S-101A
A+
TO K-111
TO K-110
TO K-109
K-117
TO K-114
TO K-113
TO K-112
A+
GRID CIRCUIT
CATHODE
OF CONTROL TUBE SEE FIGURE 4-17
PUSH-TO-TALK CIRCUIT AND K-118
K-102
K-118
K-106
B+ RELAY K-102
K-103 SEE FIGURE 4-17
K-115
CHANNEL E BUTTON
K-116
CHANNEL G BUTTON
THROUGH K-114, K-113, ETC. TO A+
TO K-114, K-113, ETC.
TO OSCILLATOR GRID

NOTE 1.
ON RADIO TRANSMITTER T-67B/ARC-3 OR T-312B/ARC-36 WIRING OF SWITCH S-101A AND S-101B HAS BEEN REVISED AS SHOWN ABOVE.

------- NEW CONNECTION
/////// CONNECTION REMOVED

Figure 4-19. Radio Transmitter T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36—Starting Relay Circuit

(2) Relay K-107 in the energized condition, performs the following functions:

(a) Energizes relay K-108 through one set of contacts.

(b) Energizes relay K-117 through a second set of contacts.

(c) After relay K-107 is energized a third set of contacts connects it to A+ through locking Switch S-101B.

(d) A fourth set of contacts shorts the motor stopping switch S-101A and prevents the motor from stopping as described in Par. 3*b*(4)(*e*)2e Section IV.

(3) Relay K-108 remains energized until a new channel is selected or the power is turned off.

(4) Relay K-117 connects the control tube grid and cathode to ground and closes the push-to-talk circuit which applies high voltage. This causes the control tube to close K-103, which operates the clutch and motor relay causing the tuning system to go into motion.

d. Should cam O-101 be resting on switch S-101B before the transmitter is turned on, the normally open contact of switch S-101B will be closed, connecting A+ to the motor relays K-104 and K-105, when the transmitter is again turned on. This will cause the motor to drive cam O-101 off the switch S-101B and stop as soon as this contact of switch S-101B is closed. The starting sequence will then return to that already described. This insures the transmitter always starting no matter where cam O-101 was resting when the transmitter was turned off.

e. Cam O-101 which is being driven by the motor, is located on top of Variable Capacitor C-115. The upper face is calibrated to indicate frequency. (See fig. 4-20.) At one point along the circumference there is a small projection. As the cam enters the uncalibrated portion of its travel this projection strikes an extended arm on switch S-101A and pushes it to one side. This separates the contacts of the switch until the projection has rotated past. This has no electrical effect, since the switch contacts are shorted by a contact on relay K-107. As the cam again re-enters the uncalibrated portion of its travel, it closes the normally open contact of switch S-101B, but has no electrical effect since its contacts are shorted by the energized contacts of relay K-103 and switch S-101A. As the cam progresses it opens the normally closed contacts of switch S-101B momentarily removing A+ connection from relay K-107 and causes it to open. Since its contact opens, the relay now has no connection to A+ and cannot close again. Relay K-117 also opens and remains open.

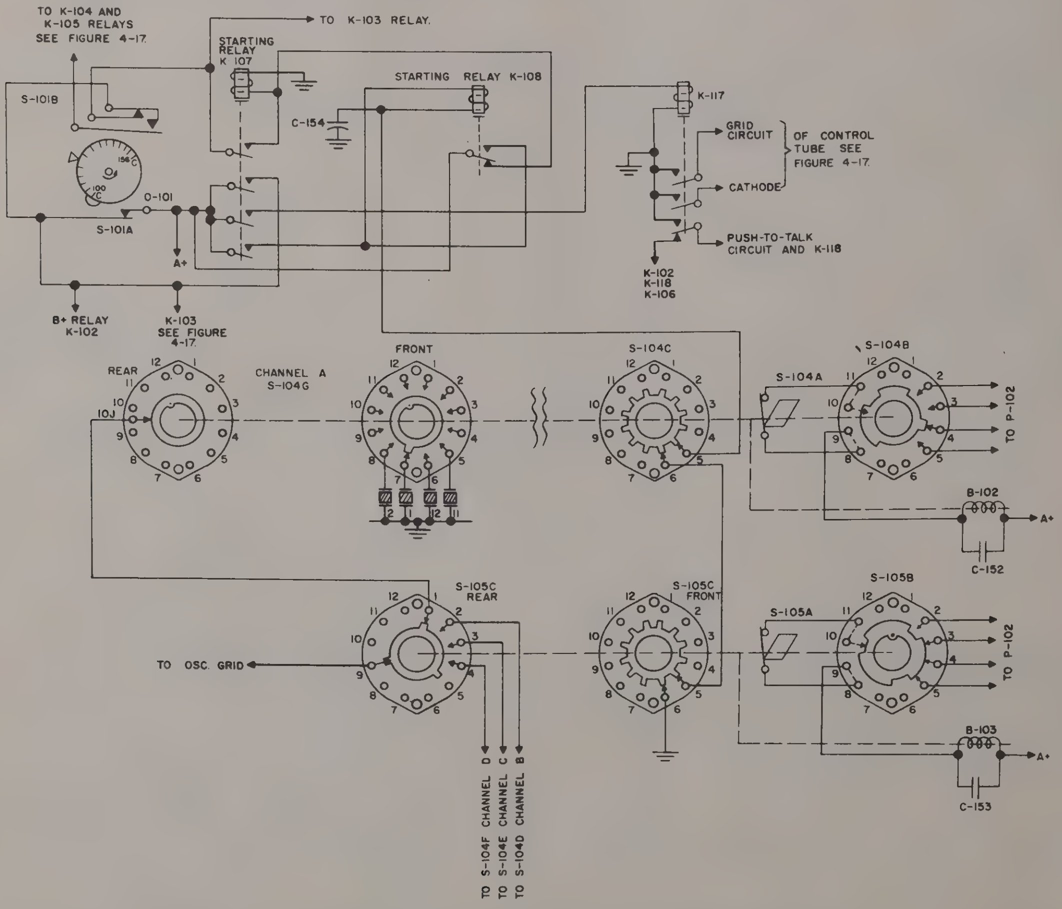

TO K-104 AND K-105 RELAYS SEE FIGURE 4-17.
TO K-103 RELAY.
STARTING RELAY K 107
STARTING RELAY K-108
S-101B
C-154
K-117
GRID CIRCUIT
OF CONTROL TUBE SEE FIGURE 4-17.
CATHODE
PUSH-TO-TALK CIRCUIT AND K-118
K-102
K-118
K-106
156 C
100 C
O-101
S-101A
A+
B+ RELAY K-102
K-103 SEE FIGURE 4-17.
REAR
CHANNEL A S-104G
FRONT
S-104C
S-104A
S-104B
TO P-102
B-102
A+
C-152
10J
S-105C REAR
S-105C FRONT
S-105A
S-105B
TO P-102
TO OSC. GRID
B-103
A+
C-153
TO S-104F CHANNEL D
TO S-104E CHANNEL C
TO S-104D CHANNEL B

Figure 4-20. Radio Transmitter T-452/ARC-49—Starting Circuit

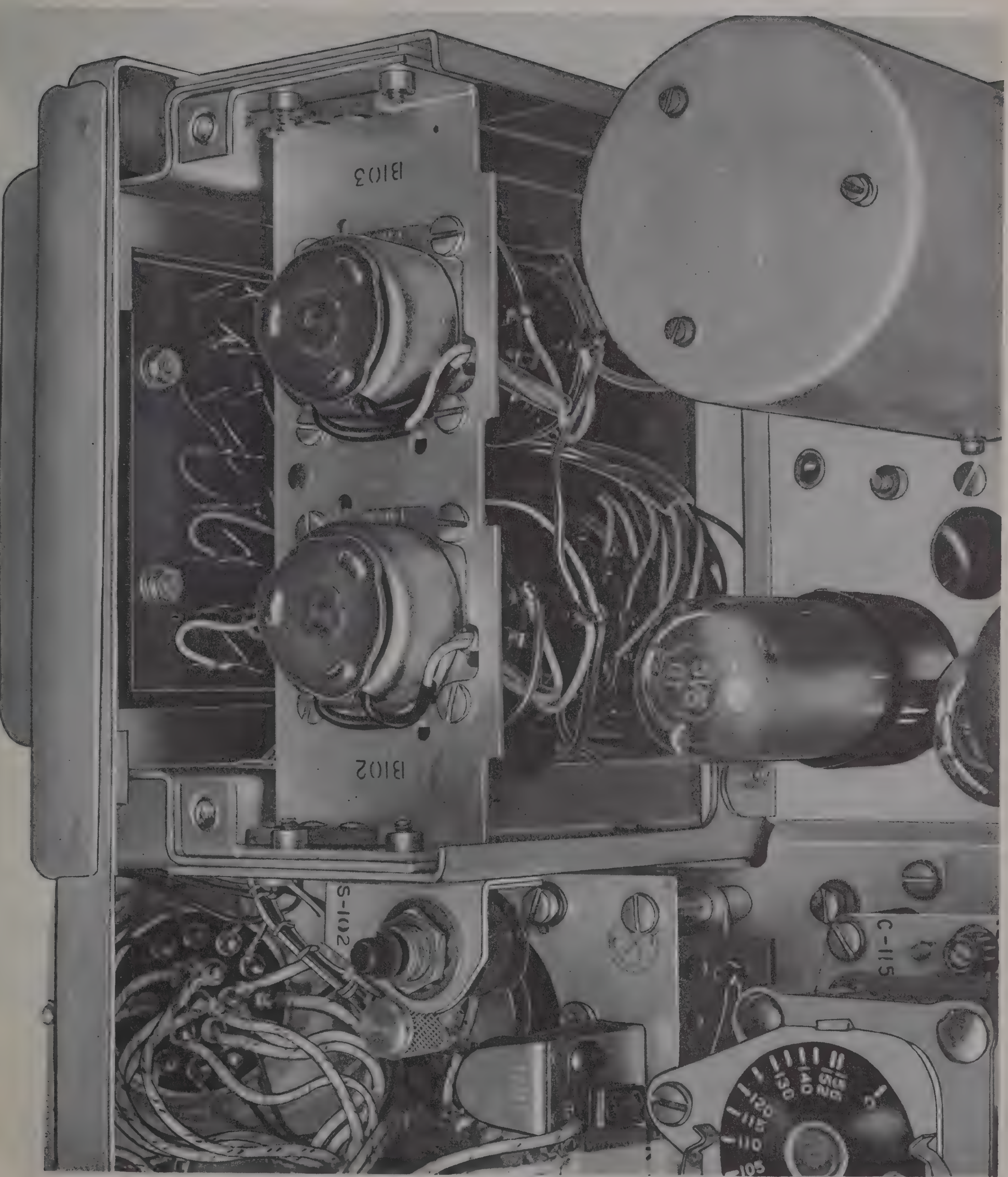

B103
B102
S-102
C-115
105
110
115
120
130
140

Figure 4-21. Radio Transmitter T-452/ARC-49—Front Panel, Rear View

f. The motor relay and clutch mechanism remain actuated by the relay K-103. The variable capacitors continue to rotate until the transmitter circuits are tuned to the 18th harmonic of the crystal frequency. At this point the sensitive relay opens as described in paragraph 3*b*(4)(*d*)3, this section. The clutch is released, the motor stops and the transmitter is tuned to the desired frequency. It is ready for operation on the designated channel whenever the push-to-talk button on the microphone is depressed. The calibration on cam O-101

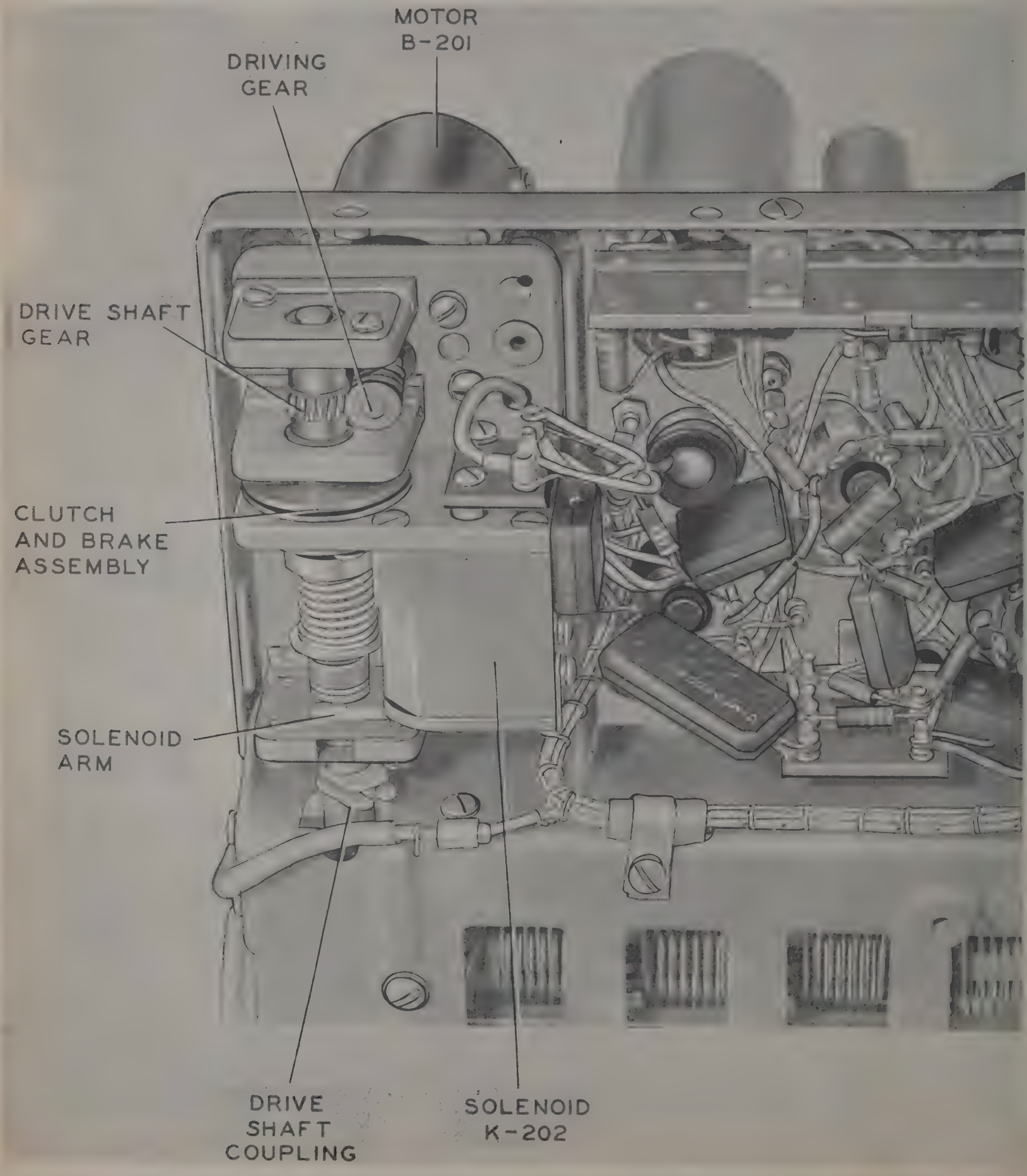

MOTOR
B-201
DRIVING
GEAR
DRIVE SHAFT
GEAR
CLUTCH
AND BRAKE
ASSEMBLY
SOLENOID
ARM
DRIVE
SHAFT
COUPLING
SOLENOID
K-202

Figure 4-22. Radio Receiver—Clutch-Brake Mechanism With Worm Gear Housing Removed

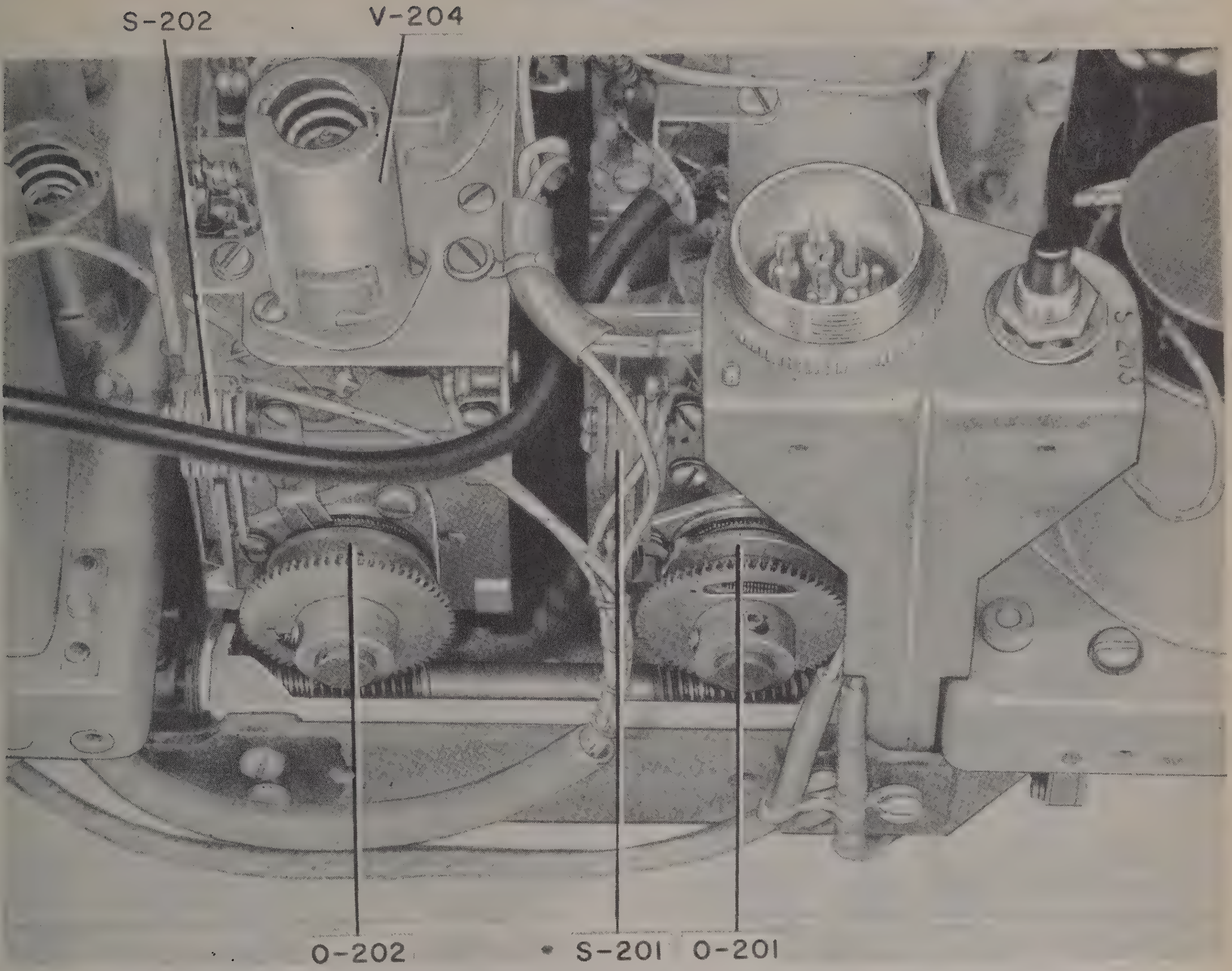


Figure 4-23. Radio Receiver—Showing Variable Capacitors, Drive Shaft, Cams, and Switches

indicates the frequency to which the transmitter is tuned. The position of the opening of switches S-101A and S-101B is indicated by the letters "C" on the calibrated cam.

(*f*) MOTOR STOPPING SWITCH S-101A. (*See figures 4-18, 4-19 or 4-20.*)—If the crystal in the selected channel should be defective, or if a channel happened to be selected in which no crystal was connected, the motor would ordinarily run indefinitely and suffer possible damage, since no grid current would ever be developed in the power amplifier and the sensitive relay could not open. In order to prevent this, motor stopping switch S-101A, which is also actuated by cam O-101, is provided. Its operation is as follows:

1. Switch S-101A is momentarily opened as the variable capacitor is leaving the calibrated portion of its travel. The opening of this switch has no effect during the normal tuning operation, since it is shorted by a contact on relay K-107, which is always energized by S-101B at this point. In the travel of the cam however, if relay K-107 has been released by the opening of switch S-101B and the variable capacitor is tuned through the entire calibrated portion of its travel without being stopped; indicating that no signal has reached the power amplifier grid, switch S-101A is opened.

2. Since under this condition relay K-107 is also open, the A+ connection to the contact arm of K-103 is broken, thereby releasing the clutch and stopping the motor. In this condition the A+ circuit to K-102 is also broken, so it is now impossible to apply B+ to the transmitter by using the push-to-talk button until another operating channel is selected.

(*g*) STARTING FROM "OFF" POSITION.—When first turning on the equipment, it is essential that the tubes be warmed up and in operation before the control tube operates, in order to prevent possible mistuning. To provide sufficient delay in heating the control tube filament relays K-403 and K-404 have been incorporated in the power junction box. Relay K-403 is connected in the B+ line of the transmitter. The control tube filament is not connected to A+ until relay K-404 is closed.

1. When the other tubes are sufficiently heated to draw full plate current, relay K-403 closes. The closing of its contacts energizes relay K-404. (See fig. 4-14.)

a. One contact of this relay connects it directly to A+, locking it in the operated position as long as the equipment remains on. The same contact connects the control tube filament to A+ allowing it to start heating.

b. A second contact shorts relay K-403 in order to remove the voltage drop through it.

2. During the warm-up period, the transmitter B+ relay K-102 is held in an energized position by the normally closed contacts of K-118. When the tubes have heated sufficiently, they draw plate current and operate the time-delay relays in the junction box, which apply A+ to the control-tube heater circuit. When A+ is applied to the control-tube heater circuit, K-118 is energized, breaking the circuit to K-102 which opens and removes B+ from all of the transmitter except the control-tube circuit. This prevents the transmitter from overheating in case of control tube failure.

3. By this system the control tube is not permitted to start heating until all the other tubes in the equipment are warm, thus insuring that the RF tubes are operating before the control tube. This is necessary to prevent improper operation of the automatic tuning system.

Note

In Radio Transmitter T-452/ARC-49 when first turning on the equipment the rotary solenoid switches will orient themselves according to the channel setting on the Control, Radio Set.

c. RECEIVER TUNING CONTROL SYSTEM.

Note

On Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 all JAN-6AK5 tubes were changed to JAN-6AK5W. A later production change converted the JAN-6AK5W tubes to JAN-5654/6AK5W tubes. Radio Receiver R-608/ARC-49 employs JAN-5654/6AK5W tubes. All types are electrically and mechanically interchangeable.

(1) BASIC ELEMENTS.—The basic elements of the receiver tuning control system are:

(*a*) Tuning control tube JAN-12SH7 (V-207).

(*b*) Tuning control relay K-201.

(*c*) Motor B-201.

(*d*) Motor relay K-203.

(*e*) Clutch-brake K-202.

(*f*) Crystal relays K-206, K-207, K-208, K-209, K-210, K-211, K-212, and K-213.

Note

Radio Receiver R-608/ARC-49 employs switches S-206D rear, S-205D, S-205E, S-205F and S-205G instead of crystal relays. Radio Receiver R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36 employs two relays, K-1000 and K-1001, in addition to the crystal relays.

(*g*) Frequency-selector switches S-204A through S-204H.

Note

Radio Receiver R-608/ARC-49 also employs switches S-205C rear and S-206C.

(*h*) Starting relays K-204 and K-205.

(*i*) Locking switch S-202 and cam O-202.

(*j*) Motor stopping switch S-201 and cam O-201.

(2) CLUTCH-BRAKE ASSEMBLY.—A mechanical description of the clutch-brake assembly follows:

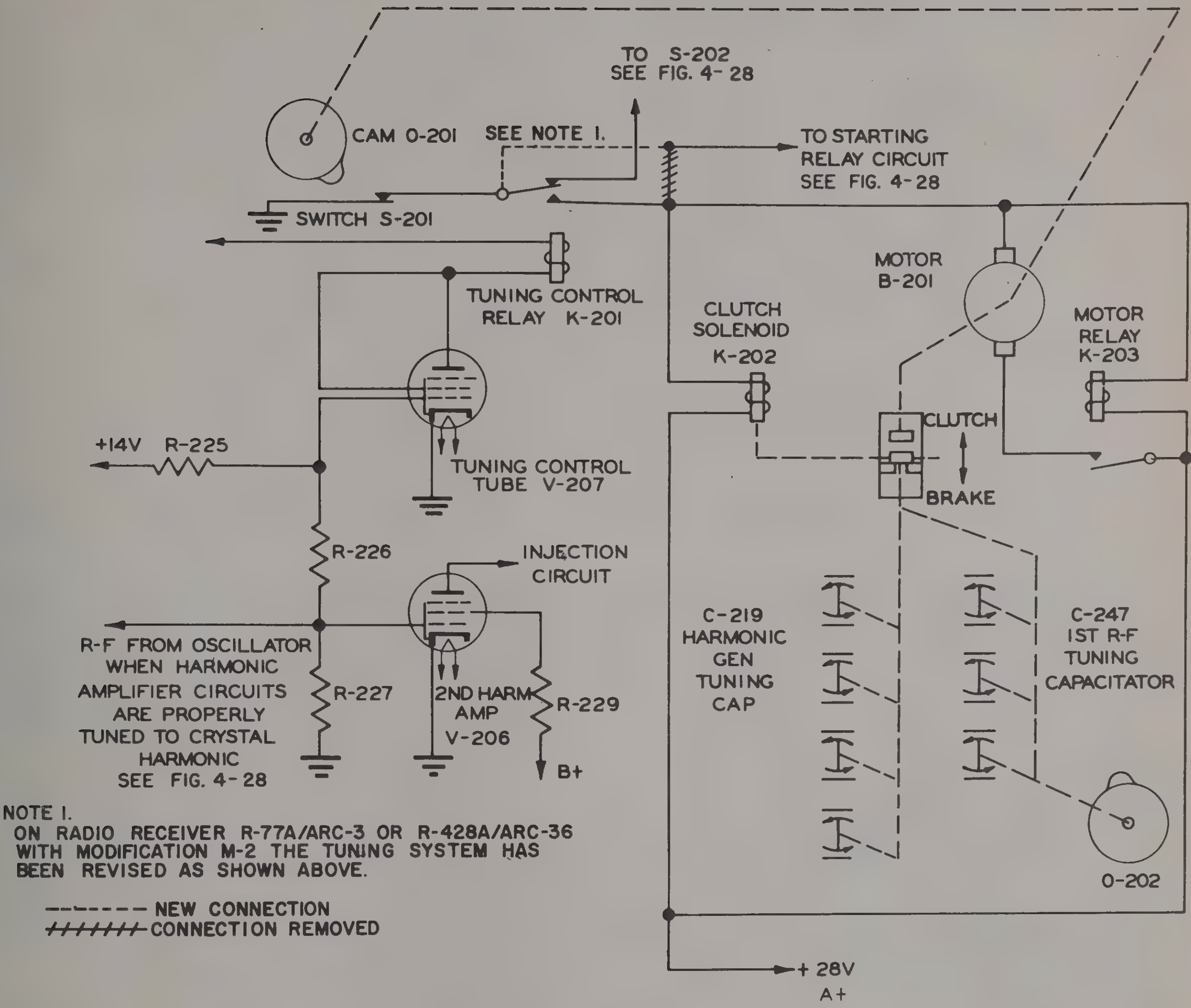
(*a*) Motor B-201, which supplies the power for the tuning assembly, is located on top of the chassis at the extreme right hand corner at the rear of the receiver chassis (see fig. 6-29). It is set in motion when relay K-201 is energized as a result of changing channels or starting from an "OFF" position.

(*b*) The shaft of the motor terminates in a worm gear which meshes with a gear on a horizontal shaft directly below the chassis. (See fig. 4-22.) The gears are covered with a metal housing. This housing is shown in the photograph of the transmitter worm gear, which is an identical assembly. (See fig. 4-10.)

(*c*) The gear shaft is located parallel to the side of the chassis. The shaft end, toward the front, terminates in a flat metal disc. This is the driving disc of the clutch assembly. (See fig. 4-22.)

(*d*) Directly opposite the face of this driving disc is an identical disc. (See fig. 4-22.) Its face is normally separated from the driving disc by approximately 0.008 of an inch. This is the movable disc of the clutch assembly. It is mounted on the end of a longer shaft, on the same center line as the short worm gear shaft and is supported by two brackets. The rear support bracket is an integral part of the solenoid relay, which is fastened to the underside of the chassis. The support towards the front of the set is a casting. Between these two supports, mounted around the shaft is a spring. This spring exerts about 4 pounds pressure on the shaft, pushing it toward the front of the set. The clutch disc therefore is held tightly against the face of the bracket, which is faced with a friction disc. This forms an effective braking action on the shaft so it cannot turn until the clutch disc is released.

(*e*) Between the two brackets and adjacent to the front one is the arm of the solenoid relay. It is yoked around the shaft in such a manner that when the relay is energized and its magnetic pull draws the arm toward the rear of the set, it moves the shaft to the rear. In so doing, the spring is compressed and the clutch disc separated from the facing on the rear bracket, thus releasing the brake. (See fig. 4-22.)


TO S-202
SEE FIG. 4-28
CAM 0-201
SEE NOTE 1.
TO STARTING
RELAY CIRCUIT
SEE FIG. 4-28
SWITCH S-201
TUNING CONTROL
RELAY K-201
MOTOR
B-201
CLUTCH
SOLENOID
K-202
MOTOR
RELAY
K-203
CLUTCH
BRAKE
+14V R-225
TUNING CONTROL
TUBE V-207
R-226
INJECTION
CIRCUIT
R-F FROM OSCILLATOR
WHEN HARMONIC
AMPLIFIER CIRCUITS
ARE PROPERLY
TUNED TO CRYSTAL
HARMONIC
SEE FIG. 4-28
R-227
2ND HARM
AMP
V-206
R-229
B+
C-219
HARMONIC
GEN
TUNING
CAP
C-247
1ST R-F
TUNING
CAPACITATOR
0-202
+ 28V
A+
NEW CONNECTION
CONNECTION REMOVED

NOTE 1.
ON RADIO RECEIVER R-77A/ARC-3 OR R-428A/ARC-36 WITH MODIFICATION M-2 THE TUNING SYSTEM HAS BEEN REVISED AS SHOWN ABOVE.

Figure 4-24. Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36, or R-428B/ARC-36—Basic Tuning Control Circuit Including Modification M-2

(*f*) The shaft moves the disc far enough away from the bracket that it contacts the friction facing on the driving disc. If the driving disc is being turned by the motor at this time, the clutch disc will also be turned by the friction facing, thus turning the shaft on which it is mounted.

(*g*) A coupling at the end of the shaft connects it to a still longer shaft containing a worm gear at each end. Each worm meshes with a rather large gear. These two gears are fastened to the shafts of two variable capacitors that tune the set to the proper frequency. (See fig. 4-23.)

(*h*) When the tuned circuits reach resonance the solenoid is released. This relieves the compression on the spring and withdraws the clutch disc from the driving disc. The clutch disc is drawn tightly against the friction facing on the bracket, consequently applying a brake to the shaft and stopping the tuning action immediately. Just how this action takes place electrically is described in paragraph 4*c*(3)(*d*)*3*, this section.

(*i*) The drive shaft extends a little beyond the two worm gears through the casting. A flexible shaft is attached to the end of the drive shaft. This flexible shaft, supported by a bracket right behind the front panel, turns both the worm gear assembly that rotates the frequency indicator dial and the cams associated with the eight selector switches. The dial is visible through a plastic window on the front panel and indicates the frequency to which the set has tuned.

(3) OPERATION.

(*a*) The variable capacitors C-219 and C-247, the eight cams associated with switch S-204A through

S-204H, and cams O-201 and O-202, are all driven by motor B-201 through the clutch-brake mechanism. (See fig. 4-24.) Operation of the motor is controlled by motor relay K-203.

(*b*) The motor relay and clutch-brake mechanism are controlled by the sensitive relay K-201, which is connected to the plate circuits of the JAN-12SH7GT tuning control tube V-207. The grid bias for this tube is derived from the grid current in the JAN-6AK5 second harmonic amplifier tube V-206. This current develops a negative DC voltage across resistor R-227, which is applied to the control tube grid. The action is such that the control tube is biased to cut-off whenever grid current is being drawn by the second harmonic amplifier tube. This occurs whenever the harmonic generator circuits are tuned to a harmonic of the crystal frequency. Under this condition the sensitive relay, which has a drop-out current rating of 2.5 milliamperes, is open and the tuning system at rest. When the harmonic generator circuits are not tuned to a harmonic of the crystal frequency, no bias for the control tube is developed, and the tube draws approximately 8 milliamperes of plate current. Under this condition the sensitive relay, which has an operating rating of 4 milliamperes, is closed. This operates the clutch, coupling the motor to the variable capacitor drive shaft, and also starts the motor by operating motor relay K-203. The action of the clutch is described in paragraph 3*c*(2), this section.

(*c*) For the AN/ARC-3 or AN/ARC-36 Radio Receivers: The crystal relays (not shown) connect the selected crystal into the oscillator circuit. There are eight of these relays, one corresponding to each of the operating channels of the receiver. The AN/ARC-36 Radio Receiver has available two banks of eight crystals from which any crystal may be connected into the oscillator circuit. Ground connection for any one of the relays

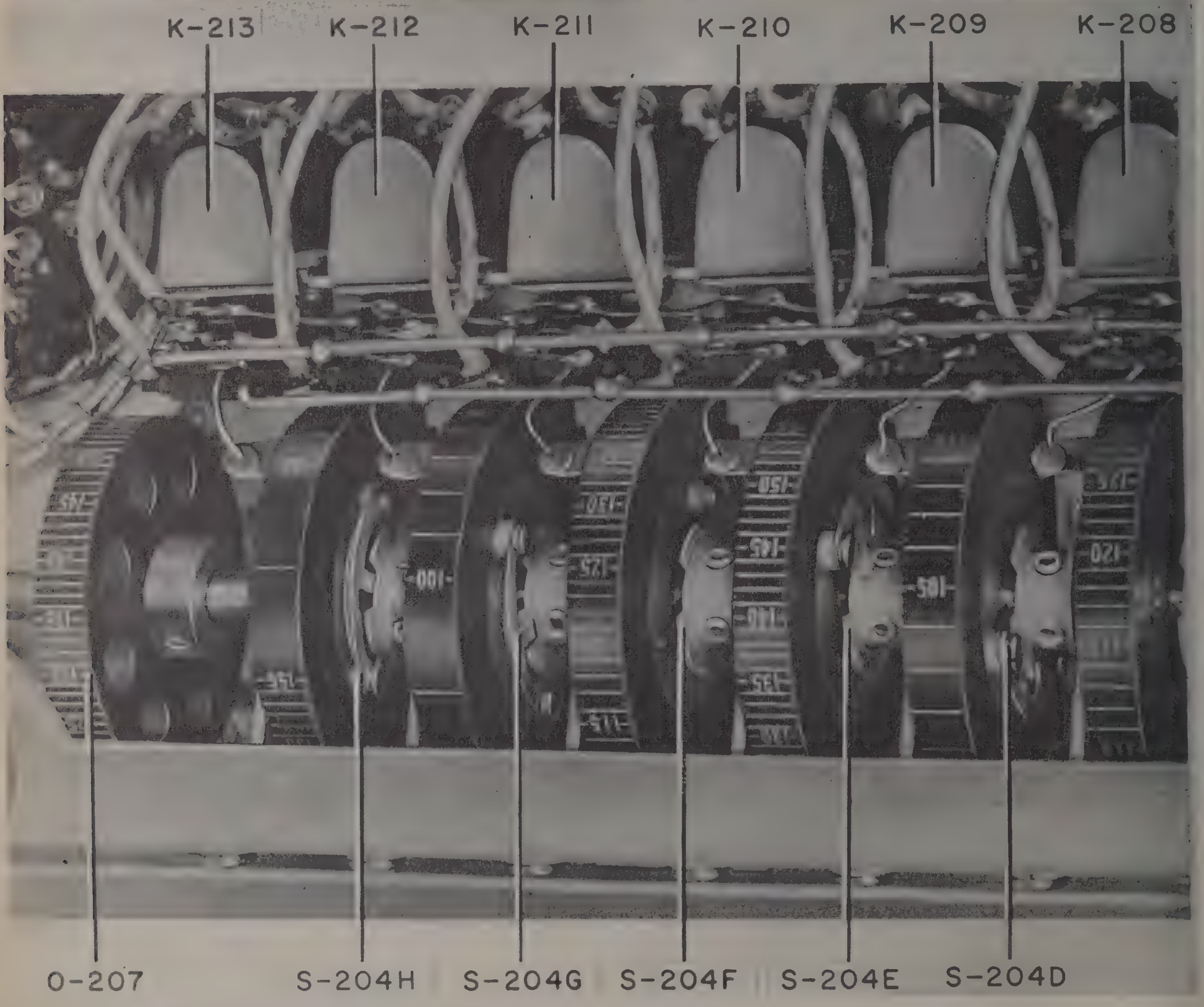


Figure 4-25. Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36, or R-428B/ARC-36—Thumbwheel Frequency Selectors

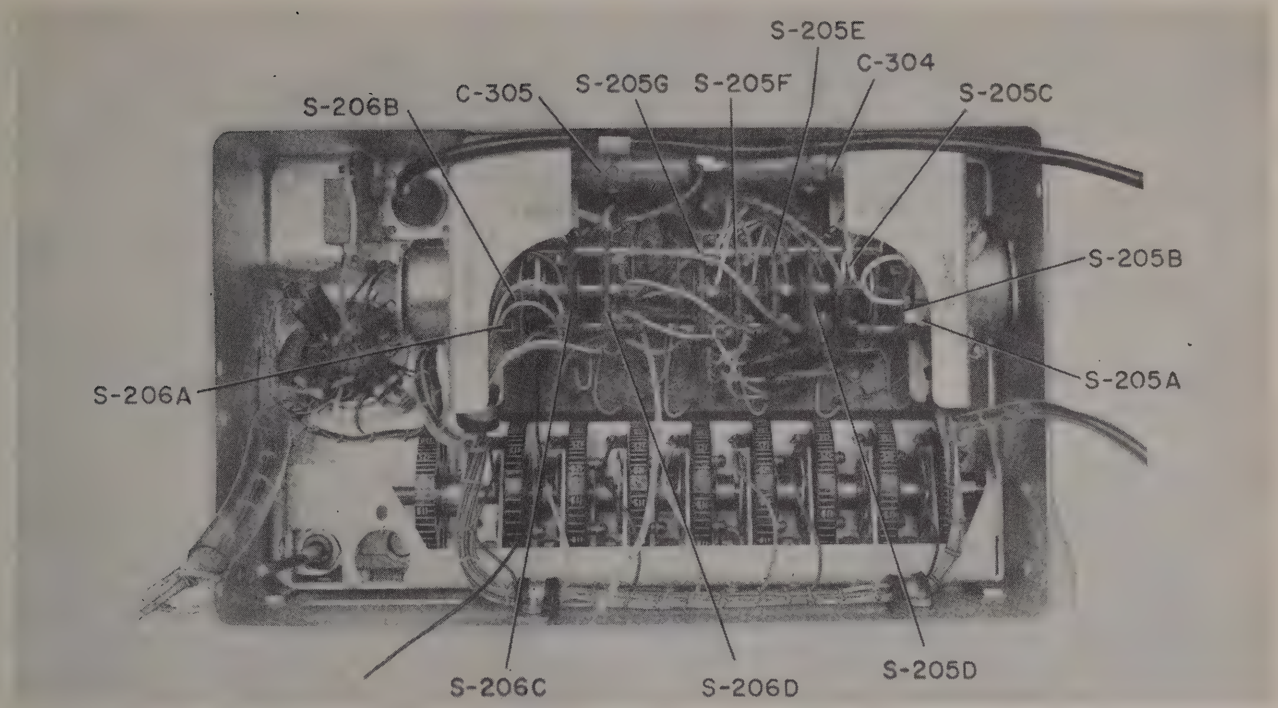


Figure 4-26. Radio Receiver R-608/ARC-49—Front Panel Assembly, Rear View

is made when the corresponding channel push button on the control box is pressed, or when the channel selector switch on the control panel is set to the corresponding channel setting. These relays also contain contacts which connect into the circuit the frequency-selector switch associated with its particular channel, and also contain contacts for operating the starting relays whenever a new channel is selected.

For Radio Receiver R-608/ARC-49: Switches S-205D, S-205E, S-205F and S-205G connect the selected numbered crystals to S-206D Rear which in turn connects the selected lettered crystal bank (i.e. A, B, C or D respectively) into the oscillator circuit. S-206C is a two circuit 4 position switch to which are connected the eight frequency-selector switches. S-205C Rear is in effect a SPDT switch to which the pick-off points of S-206C are connected. S-205C Rear, S-206C and S-204 are used to furnish a ground connection for relay K-205 which contains contacts for grounding the screen of V-207 and a contact for locking itself in the energized position.

(*d*) The basic operation of the tuning control circuit (see fig. 4-24) is as follows:

1. When a new channel is selected, the crystal to whose harmonic the harmonic generator circuits were tuned is disconnected from the circuit and another one connected.

2. If the harmonic generator circuits are not tuned to a harmonic of the new crystal, bias is removed from the tuning control tube JAN-12SH7 (V-207), since no grid current is drawn by JAN-6AK5 (V-206). Current is then drawn by JAN-12SH7 (V-207), closing relay K-201. This, in turn, operates the clutch mechanism K-202 to couple the motor drive to the variable capacitor shaft as described above. Motor relay K-203 is also operated and the motor starts, driving the variable capacitors and changing the frequency to which the harmonic generators are tuned.

3. When the harmonic generator circuits become tuned to a harmonic of the new crystal, grid current is drawn by the second harmonic amplifier tube JAN-6AK5 (V-206), applying bias to the grid of the control tube JAN-12SH7 (V-207), stopping the flow of plate current in this tube and opening relay K-201. This is a fast operating relay; it releases clutch K-202 immediately, disconnecting the variable capacitor shaft from the motor and applying a brake. At the same time, the motor circuit is opened by the opening of motor relay K-203, and the motor coasts to a stop. The RF circuits are tracked with the harmonic generator circuits and are simultaneously tuned to the desired frequency.

(*e*) FREQUENCY SELECTOR SWITCHES.—In the above described operation, the motor would ordinarily stop at the frequency of the first crystal harmonic encountered by the variable capacitors. In actual operation a particular harmonic is required; this may be the 11th, 12th, 13th, 14th, 15th, 16th, 17th, or 18th.

The frequency selector switches (see figures 4-25 and 4-26) allow presetting the equipment to stop on any harmonic chosen. It consists of a set of eight cams, grounded on a common shaft and coupled to the variable capacitor shaft with a 3 to 1 gear ratio. These are circular cams with a small notch in each. Each cam is contacted by a pair of spring clips attached to an adjustable calibrated thumbwheel. The switches remain closed except during the short period through which the notches are opposite the spring clips.

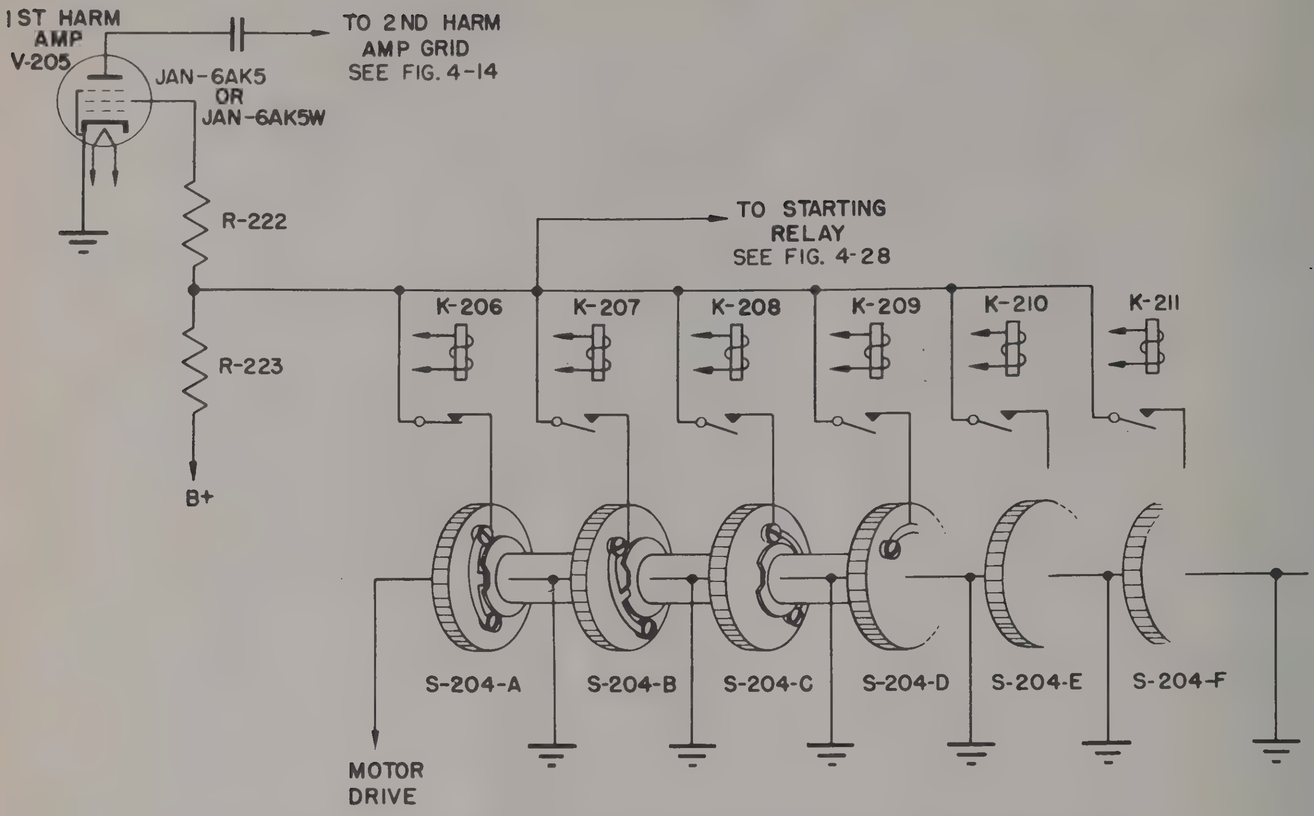


Figure 4-27. Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36—Selector Switch Circuit

1. RADIO RECEIVER—AN/ARC-3 or AN/ARC-36.

a. When one of the switches is connected into the circuit through the contacts of its associated crystal relay it maintains a short on the screen of the first harmonic amplifier tube JAN-6AK5 (V-205). (See fig. 4-27.) This prevents any drawing of grid current by the second harmonic amplifier tube, since the RF is blocked by the shorting of the screen. Thus the motor is kept from stopping except during the period when the switch is open.

b. Each switch section is pre-set by adjusting its calibrated thumbwheel at the time when new channels are being set up. When the thumbwheel is set up to any frequency indicated on the dial, the notch is opposite the spring clips as the harmonic generator circuits are being tuned to the frequency indicated on the dial.

c. The width of the notch is such that the spring clips can be open only while the circuits are being tuned through one harmonic of the crystal frequency. Therefore, by pre-adjusting the thumbwheels the second harmonic amplifier can be prevented from drawing grid current when the circuits are being tuned through any frequency harmonic except that in the vicinity of the thumbwheel setting.

2. RADIO RECEIVER—AN/ARC-49.

a. The harmonic frequency selector switches (thumbwheels) are connected into the circuit through switches S-206C, S-205C Rear, relay K-205 and relay K-204. (See fig. 4-29.) Their function is to ground the screen of first harmonic amplifier tube JAN-6AK5 (V-205) thus cutting it off. This prevents any drawing of grid current by the second harmonic amplifier tube (V-206). Thus the motor is kept from stopping until said ground is removed from the screen of V-205. The following sequences occur when a new channel is selected or when starting from an "OFF" position.

(*1*) Switch S-206C Front selects one thumbwheel from the 1-6 bank while Switch S-206C Rear selects one thumbwheel from the 7-12 bank.

(*2*) Switch S-205C Rear connects to relay K-205 and selects either the switch S-206C Front or the switch S-206C Rear bank of thumbwheels as determined by the channel setting of the Control, Radio Set.

(*3*) While the tuning system is in the uncalibrated portion of its cycle, relay K-204 is relaxed. This causes relay K-205 to stay energized until the calibrated portion of the tuning cycle is entered; at which time relay K-204 is energized by switch S-202 and Cam O-202.

(*4*) Relay K-205 remains energized, after relay K-204 becomes energized, by virtue of its own back contact which supplies A+, and the ground connection through the affected harmonic selector switch. A second set of contacts maintains the ground on the screen of the first Harmonic Amplifier tube V-205.

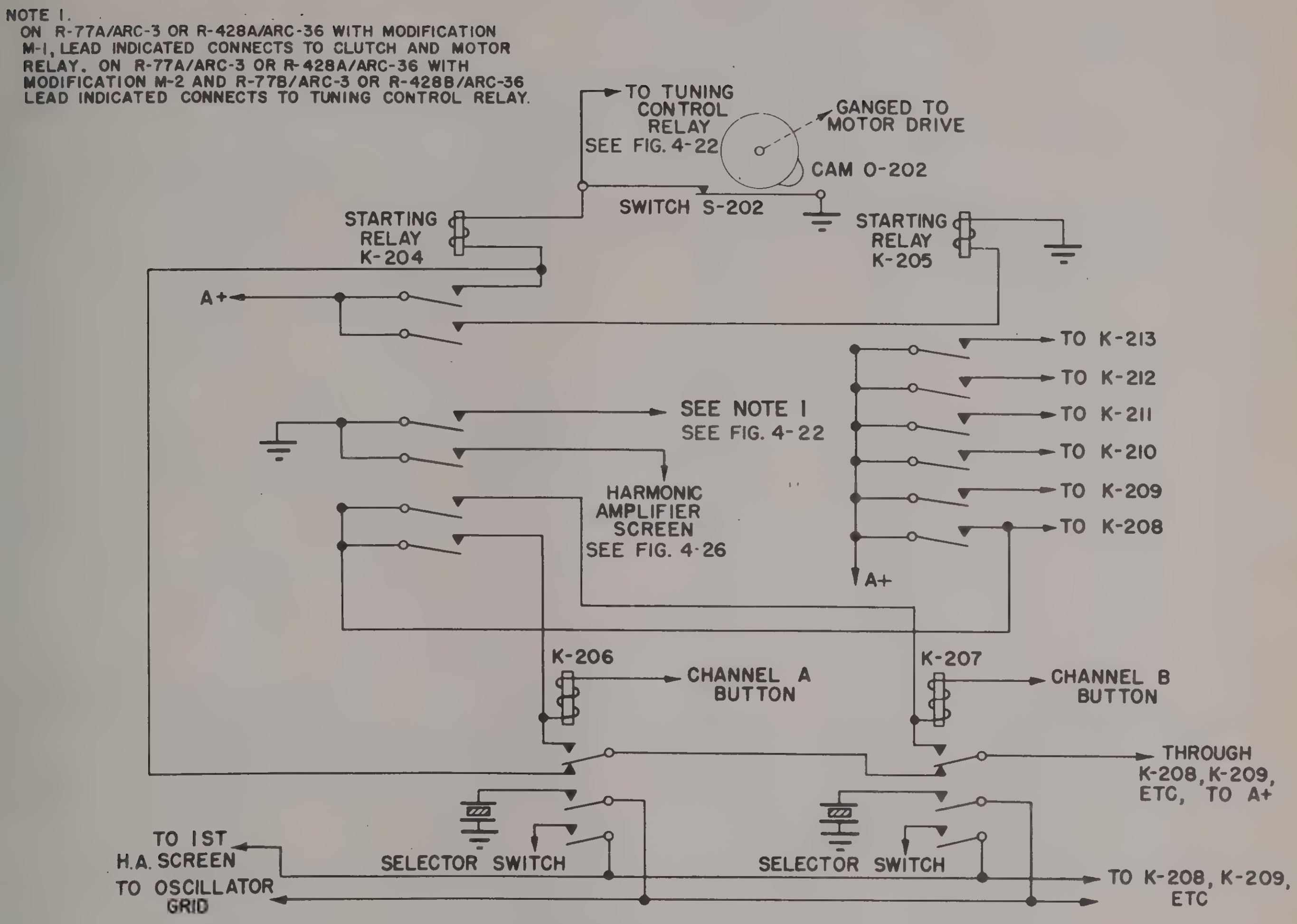

NOTE I.
ON R-77A/ARC-3 OR R-428A/ARC-36 WITH MODIFICATION M-1, LEAD INDICATED CONNECTS TO CLUTCH AND MOTOR RELAY. ON R-77A/ARC-3 OR R-428A/ARC-36 WITH MODIFICATION M-2 AND R-77B/ARC-3 OR R-428B/ARC-36 LEAD INDICATED CONNECTS TO TUNING CONTROL RELAY.
TO TUNING CONTROL RELAY SEE FIG. 4-22
GANGED TO MOTOR DRIVE
CAM O-202
SWITCH S-202
STARTING RELAY K-204
STARTING RELAY K-205
A+
TO K-213
TO K-212
TO K-211
TO K-210
TO K-209
TO K-208
SEE NOTE I
SEE FIG. 4-22
HARMONIC AMPLIFIER SCREEN SEE FIG. 4-26
A+
K-206
CHANNEL A BUTTON
K-207
CHANNEL B BUTTON
THROUGH K-208, K-209, ETC, TO A+
TO IST H.A. SCREEN
TO OSCILLATOR GRID
SELECTOR SWITCH
SELECTOR SWITCH
TO K-208, K-209, ETC

Figure 4-28. Radio Receiver R-77/ARC-3, R-77A/ARC-3, R-77B/ARC-3, R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36—Starting Relay Circuit

(5) When the Harmonic Selector Switch ground is removed, relay K-205 relaxes; this in turn removes the ground from the First Harmonic Amplifier, thus tube V-205 conducts. Relay K-205 remains relaxed until a new channel is selected.

b. Each Harmonic Selector Switch section is preset by adjusting its calibrated thumbwheel at the time when new channels are being set up. When the thumbwheel is set up to any frequency indicated on the dial, the notch is opposite the spring clips as the harmonic generator circuits are being tuned to the frequency indicated on the dial.

c. The thumbwheel bandwidth, for the band of frequencies usable above the thumbwheel setting varies from 4 to 5.5 megacycles. The maximum recommended bandwidth is 6 megacycles. Therefore, to determine the proper thumbwheel setting, when a frequency spread up to 6 megacycles is desired using one Harmonic Selector Switch, set the switch to the lowest frequency used and check for proper stopping at the highest frequency used. If the set does not stop properly, set the switch at a higher frequency in half megacycle steps until proper stopping is obtained. This method insures proper stopping and normal sensitivities for all frequencies used.

(*f*) THE STARTING RELAYS.—If the channel chosen should happen to be of a frequency very close to the previous operating frequency, it is possible that when the new crystal is connected in, a certain amount of grid current might be drawn by the second harmonic amplifier. This might be sufficient to prevent the sensitive relay from operating, in which case the tuning system would fail to operate, thereby leaving the instrument in a mistuned condition. Also, since the selector switches rotate at a speed three times that of the variable capacitor shaft, the notch is opposite the spring clips at two places in the uncalibrated portion of the variable capacitor. It is possible that the motor might stop incorrectly at one of these positions. In order to overcome these difficulties, relays K-204 and K-205 have been added. These relays operate together, relay K-205 being energized through a contact on relay K-204. (See fig. 4-28 and 4-29.) The operation of these relays is as follows:

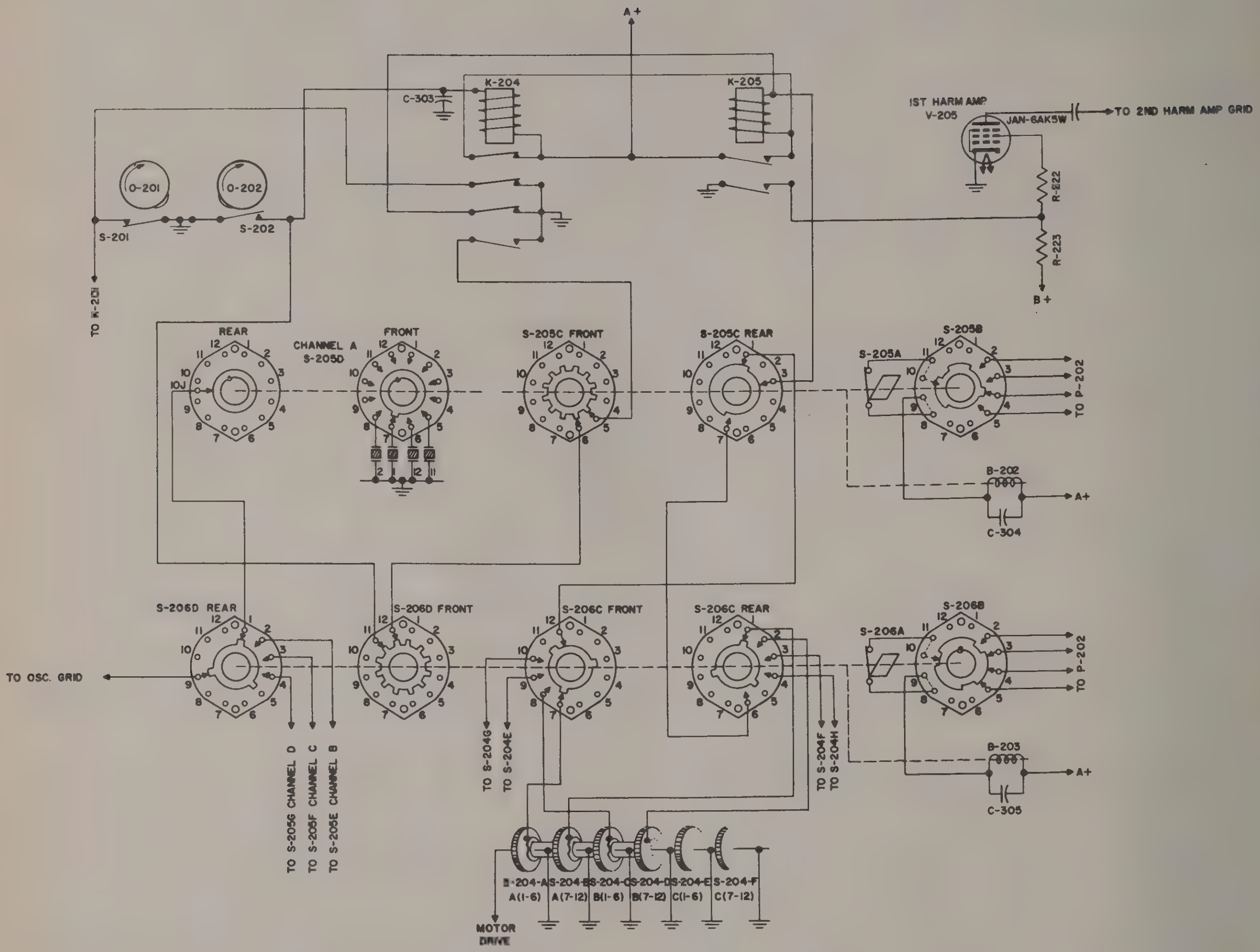

A+
K-204
K-205
C-303
O-201
O-202
S-201
S-202
TO K-201
1ST HARM AMP
V-205
JAN-6AK5W
TO 2ND HARM AMP GRID
R-222
R-223
B+
REAR
CHANNEL A
S-205D
FRONT
S-205C FRONT
S-205C REAR
S-205A
S-205B
TO P-202
B-202
C-304
A+
S-206D REAR
S-206D FRONT
S-206C FRONT
S-206C REAR
S-206A
S-206B
TO P-202
B-203
C-305
A+
TO OSC. GRID
TO S-205G CHANNEL D
TO S-205F CHANNEL C
TO S-205E CHANNEL B
TO S-204G
TO S-204E
TO S-204F
TO S-204H
S-204-A A(1-6)
S-204-B A(7-12)
S-204-C B(1-6)
S-204-D B(7-12)
S-204-E C(1-6)
S-204-F C(7-12)
MOTOR DRIVE

Figure 4-29. Radio Receiver R-608/ARC-49—Starting Circuit

1. RADIO RECEIVER—AN/ARC-3 or AN/ARC-36.

a. By pushing the proper button on the control box when selecting the new channel, the button previously depressed is automatically released. This removes the ground from the crystal relay associated with the channel on which the equipment was previously being operated, and causes the crystal relay to drop out. This is accomplished on the control panel by setting the channel selector switch to another setting. The crystal relay corresponding to the new channel does not operate, since it has no connection to A+ in the actual circuit used.

b. Since all eight crystal relays are now open, a connection is made from one side of relay K-204 to A+ through a series of back contacts on the eight crystal relays. The other side of relay K-204 is connected to ground through switch S-202. Relay K-204 is energized and operates relay K-205.

c. After relay K-204 is energized, another of its contacts connects it directly to A+, thus shorting out the chain of contacts made through the crystal relays.

(*1*) For Radio Receiver R-77/ARC-3 or R-428/ARC-36 or for Radio Receiver R-77A/ARC-3 or R-428A/ARC-36 with Modification M-1: A third contact operates the clutch brake mechanism and the motor relay, thus setting the tuning system in motion regardless of whether or not relay K-201 is closed.

For the Radio Receiver R-77A/ARC-3 or R-428A/ARC-36 with Modification M-2, R-77B/ARC-3, or R-428B/ARC-36: a third set of contacts is connected in parallel with switch S-201 to provide a connection to ground for the contacts of tuning control relay K-201 to allow the motor to continue running when switch

S-201 is opened during the cycling, or to allow the motor to start if the tuning system was stopped with switch S-201 open.

(*2*) A fourth contact grounds directly the screen of the first harmonic amplifier tube and prevents grid current from being drawn by the second harmonic amplifier tube, thus removing the bias from JAN-12SH7 (V-207). The control tube then draws current and closes relay K-201 (which closes clutch K-202 and relay K-203, thus setting the tuning system in motion in receivers with M-2 modification). The remaining two contacts of relay K-204 and the six contacts of relay K-205 connect A+ to the eight crystal relays.

d. The crystal relay which has been connected to ground through the control box or control panel now closes. This connects the proper crystal and selector switch into the circuit. At the same time the series path which originally connected relay K-204 to A+ is broken by the opening of the back contact, while the crystal relay which has closed is connected to A+ through its own contact and a portion of this same series path. Relay K-204 does not open because it is still connected to A+ through its own contact.

e. As the variable capacitor enters the calibrated portion of its travel, cam O-202, which is being driven by the motor, opens switch S-202. This cam is located on the same shaft as the gear that turns the variable capacitor C-219. (See fig. 4-23.) At one point along the circumference there is a small projection. As the cam rotates in conjunction with the variable capacitor this projection strikes an extended arm on switch S-202 and pushes it to one side. This separates the contacts of the switch until the cam projection has rotated past. When this happens, it momentarily removes the ground connection from relay K-204 and causes it to open. Having opened its own contact, the relay now has no connection to A+ and cannot close again. Relay K-205 also opens and remains open.

f. The motor relay and clutch-brake mechanism remain actuated by relay K-201. The variable capacitors continue to rotate until the selector switch is open and the harmonic generator circuits are tuned to the corresponding harmonic of the crystal frequency. At this point the sensitive relay opens as described in paragraph 3*c*(3)(*d*)*3* above, the clutch is released, the motor stops, and the receiver is tuned to the desired frequency. The frequency to which the receiver is tuned is indicated on the small dial, visible through a plastic window, located to the right of the calibrated thumbwheels on the front panel.

2. RADIO RECEIVER—AN/ARC-49.

a. When a new channel is selected on the Control, Radio Set C-1400/ARC-49, ground is supplied to motors B-202 or B-203 through one or more of the control wires that connect to the control wafer (wafer No. 1) of the Motor-Switch assemblies. The application of this ground causes the motors to rotate their associated switches in 30° steps in a clockwise manner until an open circuit condition is reached. (See fig. 4-29.) This open circuit position is a unique condition; i.e., there is only one position at which the motor ground is opened. This position corresponds to the channel setting on the Control, Radio Set.

b. The following functions are performed by the selector switches associated with Motors B-202 and B-203:

(*1*) Switch S-206D Rear, in conjunction with either switches S-205D, S-205E, S-205F or S-205G connects the desired crystal to the grid circuit of the oscillator.

(*2*) Switch S-206D Front and/or switch S-205C Front opens the ground connection of relay K-204 momentarily while rotating. This causes relay K-204 to relax.

(*3*) Switch S-205C Rear in conjunction with switches S-206C Front or S-206C Rear, connects the ground side of relay K-205 to the proper thumbwheel. Switch S-206C Front connects to the 1-6 thumbwheels and switch S-206C Rear connects to the 7-12 thumbwheels. Switch S-205C Rear selects the desired bank of thumbwheels.

c. Relay K-204 in the relaxed condition performs the following functions:

(*1*) Supplies A+ and ground to relay K-205 through two sets of normally closed contacts, thus causing relay K-205 to energize.

(*2*) Applies a short to ground across switch S-201 by a third set of normally closed contacts. This allows the tuning motor to continue running when switch S-201 is opened during the cycling or to allow the motor to start if the tuning system was stopped with switch S-201 open.

(*3*) The fourth set of contacts are normally open. These are in parallel with normally open cam switch S-202.

(*4*) One terminal of relay K-204 coil is connected to A+. The other terminal connects to ground through switches S-206D Front and S-205C Front.

d. Relay K-205 becomes energized when relay K-204 becomes relaxed. This relay remains in its energized state, after K-204 energizes, by virtue of one side of the coil being connected to A+ through a set of normally open back contacts and by virtue of a ground connection to the other side of the coil through the thumbwheels, Switch S-205C Rear and S-206C.

(*1*) A second set of normally open contacts grounds directly the screen of the first harmonic amplifier tube and prevents grid current from being drawn by the second harmonic amplifier tube, thus removing bias from JAN-12SH7 (V-207). The control tube then closes relay K-201 which closes clutch K-202 and relay K-203, thus setting the tuning system in motion.

e. As the variable capacitor enters the calibrated portion of its travel, cam O-202, which is being driven by the motor, closes switch S-202. This cam is located on the same shaft as the gear that turns variable capacitor C-219. (See fig. 4-23.) At one point along the circumference there is a small projection. As the cam rotates in conjunction with the variable capacitor, this projection strikes an extended arm on switch S-202 and pushes it to one side. This closes the contacts of the switch until the cam projection has rotated past. When this happens, it momentarily grounds relay K-204 and causes it to energize. Having closed its own contact, the relay maintains its own ground connection and remains energized until a new channel is selected. Relay K-205 remains energized through its own back contact and through the thumbwheels.

f. The motor relay and clutch-brake mechanism remain actuated by relay K-201. The variable capacitors continue to rotate until the selector switch opens, causing relay K-205 to relax, and the harmonic generator circuits are tuned to the corresponding harmonic of the crystal frequency. At this point the sensitive relay opens as described in paragraph 3*c*(3)(*d*)*3* above, the clutch is released, the motor stops, and the receiver is tuned to the desired frequency. The frequency to which the receiver is tuned is indicated on the small dial, visible through a small plastic window located to the right of the calibrated thumbwheels on the front panel.

(*g*) MOTOR STOPPING SWITCH S-201. *(See figure 4-24.)*—If the crystal in the selected channel should be defective, or if a channel should be selected in which no crystal was connected, the motor would ordinarily run indefinitely and suffer possible damage, since no grid current would ever be developed in the second harmonic amplifier and relay K-201 could not open. In order to prevent this, motor stopping switch S-201 (which is actuated by cam O-201) has been added. This cam and switch are located on variable capacitor C-247, and operate mechanically in the same manner as cam O-202 and switch S-202. (Refer to par. 3*c*(3)(*f*)*1*e or 3*c*(3)(*f*)2e above.) The electrical operation is as follows:

1. RADIO RECEIVER—AN/ARC-3 or AN/ARC-36.

a. Switch S-201 is momentarily opened as the variable capacitor is leaving the calibrated portion of its travel. The opening of this switch has no effect during the normal tuning operation since it is shorted by a contact on relay K-204, which is always energized at this point. However, if relay K-204 has been released by the opening of switch S-202 and the variable capacitor is tuned through the entire calibrated portion of its travel without being stopped, indicating that no signal has reached the second harmonic amplifier grid, switch S-201 is opened.

b. Since under this condition relay K-204 is also open, the ground is removed from the contact arm of relay K-201 and the clutch-brake mechanism and motor are released, stopping the motor.

2. RADIO RECEIVER—AN/ARC-49.

a. Switch S-201 is momentarily opened as the variable capacitor is leaving the calibrated portion of its travel. The opening of this switch has no effect during the normal tuning operation since it is shorted by a contact on relay K-204, which is always relaxed at this point. However, if relay K-204 has been energized by the closing of switch S-202 and the variable capacitor is tuned through the entire calibrated portion of its travel without being stopped, indicating that no signal has reached the second harmonic amplifier grid, switch S-201 is opened.

b. Since under this condition relay K-204 is energized, the ground is removed from the contact arm of relay K-201 and the clutch-brake mechanism and motor relay are released, stopping the motor.

(*b*) STARTING FROM "OFF" POSITION.—To prevent possible mistuning when the equipment is first turned on, it is essential that the oscillator, harmonic generator, and harmonic amplifier tubes be warmed up and in operation before the control tube. In order to provide sufficient delay in the heating of the control tube filament, relay K-405 is connected in the B+ line of the receiver. The control tube filament is not connected to A+ unless relay K-404 is closed. (See fig. 4-14.)

1. When the other tubes are heated sufficiently to draw full plate current, relay K-405 closes. The closing of its contact energizes relay K-404.

a. One contact of this relay connects it directly to A+, locking it in the operated position as long as the equipment remains on. The same contact connects the control tube filament to A+, allowing it to start heating.

b. A second contact shorts relay K-405 in order to remove the voltage drop through it.

2. During the warm-up period locking switch S-202 is shorted by a back contact of relay K-201. This prevents the starting relays from being released until the control tube has warmed up sufficiently to operate the sensitive relay.

Note

In Radio Receiver R-77A/ARC-3 or R-428A/ARC-36 with modification M-2, R-77B/ARC-3, R-428B/ARC-36 or R-608/ARC-49, the tuning motor does not start running until the control tube has warmed-up sufficiently to operate the sensitive relay.

3. By this system, the control tube is not permitted to start heating until all other tubes in the equipment are warm, thus insuring that the above-mentioned tubes are operating before the control tube.

SECTION V
MAINTENANCE

CAUTION

1. WHEN A RADIO SET HAS BEEN TURNED OFF DO NOT TURN ON FOR ONE MINUTE.
2. DO NOT RELEASE BUTTONS OR TURN POWER "OFF" WHILE SET IS CYCLING.

Note

Periodic inspections prescribed herein represent minimum requirements. If because of local conditions, peculiarities of equipment, or abnormal usage they are found insufficient to attain satisfactory operation of the equipment, local authority should not hesitate to increase their scope or frequency.

1. INSPECTION.

a. PREFLIGHT INSPECTION.—The preflight inspection should be a rapidly performed visual and operating inspection of the installed equipment that includes the following checks:

(1) See that the antenna is properly secured.

(2) See that all cords are securely fastened in their proper sockets.

(3) See that all units are securely mounted.

(4) Check the operation of transmitter and receiver on all channels as described in paragraph 3, section III.

WARNING

Operation of this equipment involves the use of high voltages which are dangerous to life. Operating personnel must at all times observe all safety regulations. Do not change tubes or make adjustments inside the equipment with the high voltage supply turned on.

b. 25-HOUR INSPECTION. — The 25-hour inspection should be a thorough visual and operating inspection and should include the following checks:

(1) See that antenna is properly secured.

(2) See that all cords are securely fastened in their proper sockets.

(3) See that all units are securely mounted.

(4) Check for mechanical ease of operation and absence of mechanical looseness of all controls.

(5) Check the operation of transmitter and receiver on all channels as described in paragraph 3, section III.

(6) Using Phantom Transmitter Antenna TS-78 U, check the transmitter for satisfactory power output. Check filament voltage, modulation, sidetone and absence of intermittent operation when equipment is subjected to jarring.

(7) Check the receiver for satisfactory output level, absence of undesired oscillation, and absence of intermittent operation when the equipment is subjected to jarring.

(8) In bomber installations see that the interphone system, including headsets and microphone, is working satisfactorily. Check for absence of intermittent operation when equipment is subjected to jarring.

c. 100-HOUR INSPECTION.—The 100-hour inspection should be a thorough searching visual and operational inspection which includes the following check:

(1) Check antenna wiring for undesired leakage paths to ground.

(2) Remove all major assemblies from mounts. Remove covers from chassis.

(3) Check all wiring and connections for satisfactory connections and absence of corrosion and leakage paths.

(4) Visually check all relays and cam switch contacts for cleanliness and tension.

(5) Check all tubes. Replace defective tubes with new ones of the same type. Reinstall serviceable tubes in same sockets.

(6) Remove dynamotor end bells and check commutators for undesired grooving. Check brushes for freedom of movement and proper tension. Remove dirt, dust and any excessive oil which may have accumulated.

(7) Check the dynamotor armatures for free movement.

(8) Check the tuning motors for defective brushes.

(9) Check all mechanical parts for proper securing. Check all controls for proper movement and absence of excessive wear. Check gears for excessive backlash.

(10) Check the lubrication of the various points according to paragraph 7, this section.

(11) Check fuses mounted on top of the power junction box chassis.

(12) Replace all chassis covers and reinstall the major assemblies.

(13) Check the transmitter for satisfactory output level with Phantom Transmitter Antenna TS-78/U.

(14) Check the transmitter for modulation and sidetone.

(15) Check the receiver for satisfactory output level.

(16) Check the receiver for absence of undesired oscillation.

(17) Check the operation of the complete equipment on all channels, as described in paragraph 3, section III.

(18) Check for absence of intermittent operation when the equipment, including associated plugs and cording, is subjected to jarring.

2. TROUBLE SHOOTING INSTALLED EQUIPMENT.

The most frequent operating difficulties can usually be repaired or the necessary adjustments made without dissassembling the major assemblies. Check the trouble symptoms against those listed in the trouble charts in sub-paragraphs *a* and *b* following. If it is impossible to correct the trouble by applying the suggested remedies given in these sub-paragraphs, refer to paragraph 3, this section.

a. TRANSMITTER TROUBLE CHART.—If transmission is not available on a particular channel, check the position at which the tuning system stops when that channel is selected. On the transmitter an audio tone is normally heard in the headsets when the motor is running. If the motor stops at the cam position on the high frequency end of the band, no sidetone will be heard in the headsets when an attempt is made to operate the transmitter. A small dial, located under the top cover on the variable capacitor nearest the front, provides a further check. Possible repairs for the various troubles are listed in table 5-1. These repairs can be made without disassembling the major assemblies.

Note

When an attempt is made to operate Radio Transmitter T-67A/ARC-3 or T-312A/ARC-36 when the motor has stopped on the high frequency end of the cam, sidetone will be heard in the headsets if the transmitter is either voice modulated or keyed.

WARNING

Operation of this equipment involves the use of high voltages which are dangerous to life. Operating personnel must at all times observe all safety regulations. Do not change tubes or make adjustments inside the equipment with high voltage supply on.

TABLE 5-1. TRANSMITTER TROUBLE CHART

Note

On late production of Radio Transmitter T-67B/ARC-3 or T-312B/ARC-36, V-107 and V-108 were changed from JAN-6L6GA to JAN-6L6WGB. Radio Transmitter T-452/ARC-49 employs JAN-6L6WGB tubes.

Trouble	*Remedy*
Transmission but no sidetone. Tuning system stops at proper frequency.	Clean contacts of relay K-406 (in power junction box).
No modulation or sidetone. Tuning system stops at proper frequency.	Replace JAN-6J5 (V-106) or JAN-6V6GT (V-109). Clean contacts of relay K-106.
No transmission or sidetone. Tuning system stops at high frequency end of band.	Replace crystal. Replace JAN-6V6GT (V-101), JAN-6V6GT (V-102), JAN-832A (V-103), JAN-832A (V-104), JAN-6L6GA (V-107), or JAN-6L6GA (V-108). Clean contacts of crystal relay for inoperative channel.
No transmission. Motor does not stop. *(Not applicable to Radio Transmitter T-67/ARC-3 or T-312/ARC-36 with M-3 Modification, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36 or T-312B/ARC-36 unless all buttons of an unmodified control box are up. This is not applicable to T-452/ARC-49.*	If dynamotor runs when channels are being selected: 1. Replace transmitter fuse on power junction box. 2. Replace JAN-12SH7 (V-105). 3. Clean contacts of relay K-102. 4. Clean contacts of relays K-403 and K-404 in power junction box. 5. Replace plug-in-relay K-103. 6. Clean contacts on relay K-104. If dynamotor does not run: 1. Clean contacts of relay K-106. 2. Clean contacts of relay K-104. 3. Clean contacts of relay K-402, in power junction box. (Relay K-402 was changed to a sealed type relay during production of J-68A/ARC-3 and cannot be cleaned.)
No transmission. Motor does not start. (If top cover is removed, Push-Button Switch S-102, located on the side of the crystal compartment, must be depressed to make the motor run.)	Check circuit breakers in airplane wiring. Check battery connections. Clean all crystal relay contacts. Clean contacts of relays K-107 and K-108. Clean contacts of relay K-104.
The following is applicable only to Radio Transmitter T-67/ARC-3 or T-312/ARC-36 with M-3 Modification, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49.	
No transmission; tuning motor will not run. Relays may chatter when new channel is selected.	Tuning system may have stopped with S-101B open. Close relay K-117 manually while holding S-102 closed.

TABLE 5-1 (Continued)

Trouble	*Remedy*
	If the equipment has not had time to warm up, tuning system may not be in operation. If tuning system does not operate after sufficient warm-up period, clean contacts of S-101B, check JAN-12-SH7 (V-105), K-103, K-104, K-106, or B+ fuse on junction box. If tuning system continues to stop with S-101A open, check K-102, JAN-832A (V-104) and alignment of transmitter. Clean contacts of K-403 and K-404 in the power junction box.
The following is applicable only to Radio Transmitter T-452/ARC-49.	
No transmission; tuning motor and rotary solenoid switches will not stop.	Defective rotary solenoid circuit. See paragraph c. ROTARY SOLENOID SWITCH TROUBLE CHART.

b. RECEIVER TROUBLE CHART.—If reception is not available on a particular channel, check the frequency at which the tuning system stops when that channel is selected. On the receiver this is indicated by the frequency indicator dial at the lower right-hand corner of the front panel. Probable repairs for the various troubles are listed below.

WARNING

Operation of this equipment involves the use of high voltages which are dangerous to life. Operating personnel must at all times observe all safety regulations. Do not change tubes or make adjustments inside the equipment with high voltage supply on.

TABLE 5-2. RECEIVER TROUBLE CHART

Note

On Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 all JAN-6AK5 tubes were changed to JAN-6AK5W. A later production change converted the JAN-6AK5W tubes to JAN-5654/6AK5W. Radio Receiver R-608/ARC-49 employs JAN-5654/6AK5W tubes. All types are electrically and mechanically interchangeable.

Trouble	*Remedy*
No reception. Tuning system stops at proper frequency.	Replace tube JAN-12SG7 (V-211), JAN-12SG7 (V-212), JAN-12H6 (V-213), JAN-12SN7GT (V-214), JAN-12SL7GT (V-215), JAN-12SN7GT (V-216), or JAN-12A6 (V-217). Replace tube JAN-6AK5 (V-208), JAN-9001 (V-209), or JAN-12SG7 (V-210). Clean contacts of relay K-406 in power junction box.
No reception. Tuning system stops at high frequency end of band.	Replace crystal. Replace tube JAN-9002 (V-201), JAN-6AK5 (V-202), JAN-6AK5 (V-203), JAN-6AK5 (V-204), JAN-6AK5 (V-205), JAN-6AK5 (V-206), JAN-6AK5 (V-208), or JAN-9001 (V-209). Clean contacts of crystal relay for inoperative channel. Clean contacts of relay K-204 and K-205 and all crystal relays.
No reception. Tuning system stops at wrong frequency.	Check setting of thumbwheel for inoperative channel. Clean contacts of relay for inoperative channel. Clean contacts of relays K-204 and K-205 and all crystal relays.
No reception. Motor will not stop. *(Not applicable to Radio Receiver R-77A/ARC-3 or R-428A/ARC-36 with M-2 Modification, R-77B/ARC-3 or R-428B/ARC-36 unless all buttons of an unmodified control box are up. This is not applicable to Radio Receiver R-608/ARC-49.*	Replace receiver fuse (on power junction box). Replace tube JAN-12SH7 (V-207) or JAN-12SG7 (V-210). Clean contacts of relays K-404 and K-405 (in power junction box). Replace plug-in-relay K-201. Replace dynamotor brushes.
No reception. Motor will not start. (If top cover is removed, Push-Button Switch S-203, located near the top of the case on the right side must be pushed to make the motor run.)	If dynamotor does not run: 1. Check circuit breakers in airplane wiring. 2. Check battery connections. 3. Clean contacts of relay K-401, in power junction box. (Relay K-401 was changed to a sealed type relay during production of J-68A/ARC-3 and cannot be cleaned.) If dynamotor runs, clean contacts of relay K-203.
The following is applicable only to Radio Receiver R-608/ARC-49.	
No reception; tuning motor and rotary solenoid switches will not stop.	Defective rotary solenoid circuit. See paragraph c. ROTARY SOLENOID SWITCH TROUBLE CHART.
No reception; tuning system stops at next higher or lower harmonic.	Set thumbwheel to slightly higher or lower frequency and check that the desired band of frequencies are obtained.

c. AN/ARC-49 ROTARY SOLENOID SWITCH TROUBLE CHART.—Defective operation of the rotary solenoid switches manifests itself by failure to operate, failure to stop, or failure to stop on correct channels. The operation of each switch is controlled by four control wires connected to the wafer nearest the switch motor. Possible repairs for the various troubles are listed in table 5-3.

WARNING

Continuous running of the rotary solenoid switch motors for periods longer than one minute may cause damage to the equipment.

TABLE 5-3. AN/ARC-49 ROTARY SOLENOID SWITCH TROUBLE CHART

Trouble	*Remedy*
The following is applicable to the four position switch S-105 or S-206 (channel selector) only.	
Tuning system will not stop cycling regardless of the channel selector switch setting.	Check for two or more control wires shorted to ground or shorted to each other.
Tuning system will stop on only one setting of channel selector switch.	Check for one control wire shorted to ground.
Tuning system cycles on all but one setting of channel selector switch	Check for one open control wire.
The following is applicable to the twelve position switch S-104 or S-205 (crystal selector) only.	
Tuning system stops on only six settings of crystal selector switch.	1. Check for one control wire shorted to ground. 2. Check for short between two control wires.
Tuning system stops on only three settings of crystal switch.	Check for two control wires shorted to ground.
Tuning system stops on only two settings of crystal selector switch.	Check for short between three control wires.
Tuning system stops on only one setting of crystal selector switch.	Check for three control wires shorted to ground.
Tuning system will not function for any setting of crystal selector switch.	Check for one or more open control wires.
Tuning system will not stop cycling regardless of crystal selector switch setting.	1. Check for all four control wires shorted to ground. 2. Check for all four control wires shorted to each other.

Note

If the tuning assembly fails to stop regardless of the setting of the channel and crystal selector switches the top cover of the faulty major assembly should be removed. A visual check will determine whether the four position (channel selector) switch, S-105 or S-206, or the twelve position (crystal selector) switch, S-104 or S-205, is faulty.

3. TROUBLE SHOOTING AT REPAIR STATION.

a. PRELIMINARY.—Systematic operating tests should be made to determine definitely the nature of the trouble existing in the assembly. Valuable time can be saved by following the procedure outlined.

(1) Using cordage of a bench test set-up or the cordage supplied with Radio Test Set AN/ARM-1 connect the major assemblies for normal operation. Refer to section II, paragraph 1*d*, if necessary.

(2) Check the operation of the equipment and localize the operating difficulties to the section of the defective major assembly by the use of the trouble charts of paragraph 2*a*, *b* and *c*, this section.

(3) Troubles which cannot be located or corrected by the use of the trouble charts will require a more detailed test procedure. Check the various components of the section to which the trouble was localized by use of the voltage and resistance charts of paragraph 3*b* and 3*c*, this section.

b. VACUUM TUBE SOCKET VOLTAGES.—The vacuum tube layout diagrams for this equipment are given in figures 5-1 and 5-2. All voltages are measured from the points indicated to chassis. When voltages are found to vary appreciably (more than ± 15%) from the typical values given in the following tables, this is sufficient reason for further examination of components associated with the particular circuit in question.

(1) TRANSMITTER.—Voltage measurements are made with the transmitter operating and supplying approximately 8 watts into a dummy antenna. Use Phantom Transmitter Antenna TS-78/U for this purpose. This is necessary because of the design of the tuning system, since in normal operation no high voltage can be applied to the transmitter unless it is tuned to a crystal harmonic in order to protect the final amplifiers. As a result, variations in the screen and grid voltages on the RF tubes may be slightly greater than noted above.

TABLE 5-4. TUBE SOCKET VOLTAGE MEASUREMENTS FOR THE RADIO TRANSMITTER

Note

On late production of Radio Transmitter T-67B/ARC-3 or T-312B/ARC-36, V-107 and V-108 were changed from JAN-6L6GA to JAN-6L6WGB. Radio Transmitter T-452/ARC-49 employs JAN-6L6WGB tubes.

TABLE 5-4 (Continued)
(All measurements are from the pins indicated to ground.)

Pin No.	Function	1000 Ohm/Volt Meter Volts	1000 Ohm/Volt Meter Scale	20M Ohm/Volt Meter Volts	20M Ohm/Volt Meter Scale
(V-101) JAN-6V6-OSCILLATOR					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	6.9	7.5	6.9	10.0
3	Plate	185.0	750.0	195.0	250.0
4	Screen	175.0†	750.0	190.0†	250.0
5	Grid	*	—	−17.0	50
		−4.0*	10.0*	−5.5*	10.0*
6	——	*	—	−17.0	50
		−4.0*	10.0*	−5.5*	10.0*
7	Heater	0.0	7.5	0.0	10.0
8	Cathode	11.5	50.0	11.5	50.0

*On Radio Sets AN/ARC-3 or AN/ARC-36 these values cannot be measured with a 1000 Ohm/Volt Meter.
†Slightly lower on transmitters bearing "M-1" near the name plate.
*Values so indicated are for Radio Set AN/ARC-49.

Pin No.	Function	1000 Ohm/Volt Meter Volts	1000 Ohm/Volt Meter Scale	20M Ohm/Volt Meter Volts	20M Ohm/Volt Meter Scale
(V-102) JAN-6V6 FIRST HARMONIC GENERATOR					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	13.5	150.0	13.5	50.0
3	Plate	310.0	750.0	325.0	1000.0
4	Screen	275.0	750.0	290.0	1000.0
5	Grid	0.0	7.5	−53.0	250.0
6	——	0.0	7.5	−53.0	250.0
7	Heater	6.9	7.5	6.9	10.0
8	Cathode	19.0	150.0	20.0	50.0
(V-103) JAN-832A SECOND HARMONIC GENERATOR					
1	Heater	13.5	150.0	13.5	50.0
2	Grid	0.0	7.5	−26.0	50.0
3	Screen	200.0	750.0	215.0	250.0
4	Cathode	52.5	150.0	55.0	250.0
5	Heater Tap	20.5	150.0	21.0	250.0
6	Grid	0.0	7.5	−26.0	50.0
7	Heater	27.0	150.0	27.0	250.0
	Plate	395.0	750.0	395.0	1000.0
	Plate	395.0	750.0	395.0	1000.0
(V-104) JAN-832A POWER AMPLIFIER					
1	Heater	13.5	150.0	13.5	50.0
2	Grid	−3.5	7.5	−20.0	50.0
3	Screen	200.0	750.0	215.0	250.0
4	Cathode	21.5	150.0	21.5	50.0
5	Heater Tap	6.9	7.5	6.9	10.0
6	Grid	−3.5	7.5	−20.0	50.0
7	Heater	0.0	7.5	0.0	10.0
	Plate	355.0	750.0	375.0	1000.0
	Plate	355.0	750.0	375.0	1000.0
(V-105) JAN-12SH7 TUNING CONTROL TUBE					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	0.0	7.5	0.0	10.0
3	Cathode	27.0	150.0	27.0	50.0
4	Grid	−0.4	7.5	−7.0	10.0
5	Cathode	27.0	150.0	27.0	50.0
6	Screen	124.0	150.0	140.0	150.0
7	Heater	14.0	150.0	14.0	50.0
8	Plate	390.0	750.0	390.0	1000.0
(V-106) JAN-6J5 SPEECH AMPLIFIER					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	15.0	150.0	15.0	50.0
3	Plate	185.0	750.0	195.0	250.0
4	——	——	——	——	——
5	Grid	0.0	7.5	0.0	10.0
6	——	——	——	——	——
7	Heater	22.0	150.0	22.0	50.0
8	Cathode	5.5	7.5	6.2	10.0

TABLE 5-4 (Continued)

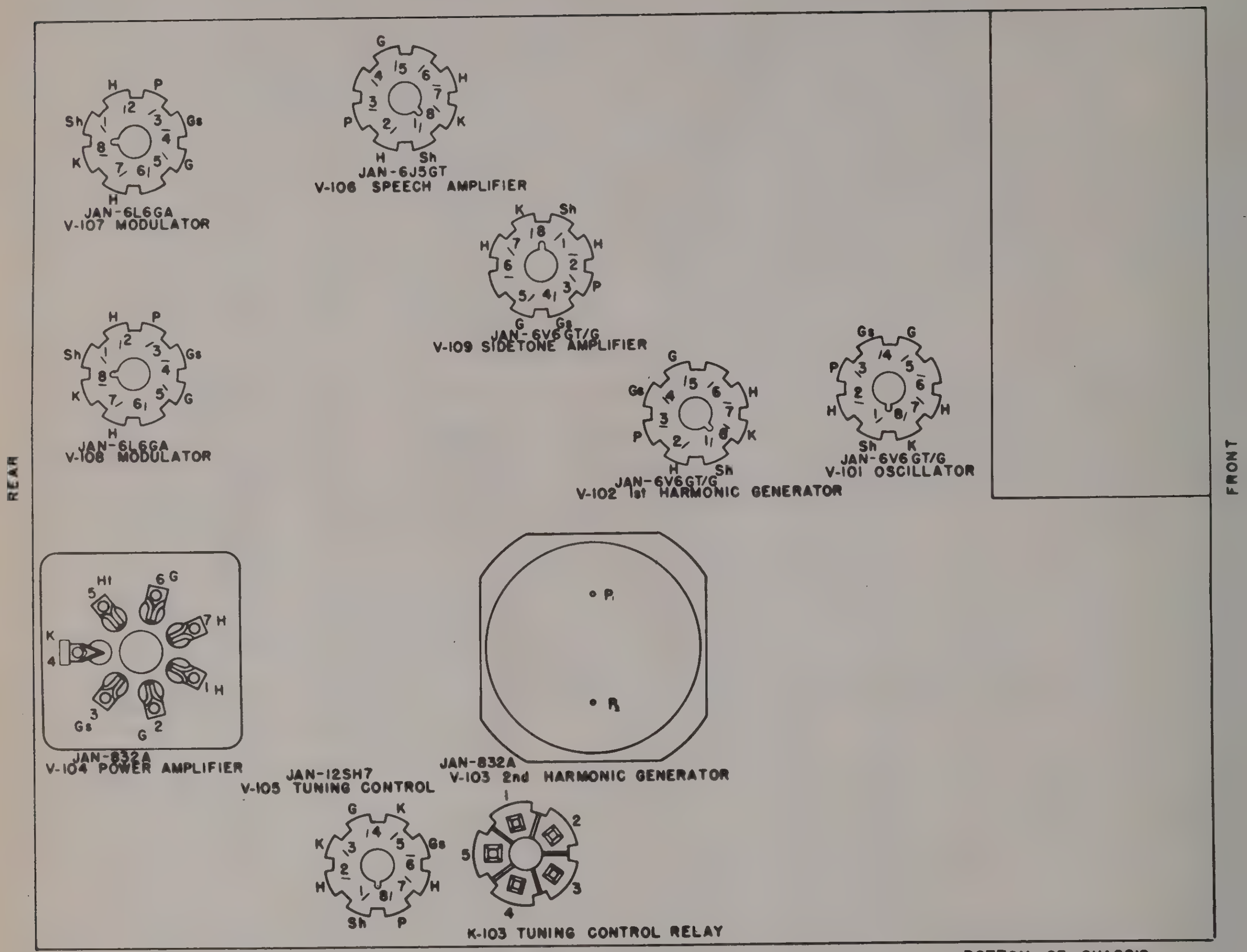
Pin No.	Function	1000 Ohm/Volt Meter Volts	1000 Ohm/Volt Meter Scale	20M Ohm/Volt Meter Volts	20M Ohm/Volt Meter Scale
(V-107) JAN-6L6GA MODULATOR					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	13.5	150.0	13.5	50.0
3	Plate	385.0	750.0	390.0	1000.0
4	Screen	185.0	750.0	195.0	250.0
5	Grid	0.0	7.5	0.0	10.0
6	——	385.0	750.0	390.0	1000.0
7	Heater	20.0	150.0	20.0	50.0
8	Cathode	14.0	150.0	15.0	50.0
(V-108) JAN-6L6GA MODULATOR					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	20.0	150.0	20.0	50.0
3	Plate	385.0	750.0	390.0	1000.0
4	Screen	185.0	750.0	195.0	250.0
5	Grid	0.0	7.5	0.0	10.0
6	——	−21.0	150.0	−18.0	50.0
7	Heater	27.0	150.0	27.0	50.0
8	Cathode	14.0	150.0	15.0	50.0
(V-109) JAN-6V6 SIDETONE AMPLIFIER					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	0.0	7.5	0.0	10.0
3	Plate	365.0	750.0	390.0	1000.0
4	Screen	185.0	750.0	195.0	250.0
5	Grid	0.0	7.5	0.0	10.0
6	——	——	——	——	——
7	Heater	7.2	7.5	7.2	10.0
8	Cathode	12.0	150.0	13.0	50.0
SENSITIVE RELAY SOCKET					
1	——	395.0	750.0	395.0	1000.0
2	——	27.0	150.0	27.0	50.0
3	——	27.0	150.0	27.0	50.0
4	——	0.0	7.5	0.0	10.0
5	——	395.0	750.0	395.0	1000.0

(2) RECEIVER.—Voltage measurements are made with the receiver tuning system at the motor stopping cam and the squelch control full counterclockwise. Readings which vary considerably from these figures, when the set is operating on a particular frequency, are so noted.

TABLE 5-5. TUBE SOCKET VOLTAGE MEASUREMENTS FOR THE RADIO RECEIVER

Note

On Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 all JAN-6AK5 tubes were changed to JAN-6AK5W. A later production change converted the JAN-6AK5W tubes to Jan-5654/6AK5W. Radio Receiver R-608/ARC-49 employs JAN-5654/6AK5W tubes. All types are electrically and mechanically interchangeable.


JAN-6L6GA
V-107 MODULATOR
JAN-6J5GT
V-106 SPEECH AMPLIFIER
JAN-6V6GT/G
V-109 SIDETONE AMPLIFIER
JAN-6L6GA
V-108 MODULATOR
JAN-6V6GT/G
V-102 1st HARMONIC GENERATOR
JAN-6V6GT/G
V-101 OSCILLATOR
JAN-832A
V-104 POWER AMPLIFIER
JAN-832A
V-103 2nd HARMONIC GENERATOR
JAN-12SH7
V-105 TUNING CONTROL
K-103 TUNING CONTROL RELAY
REAR
FRONT
H
P
Sh
K
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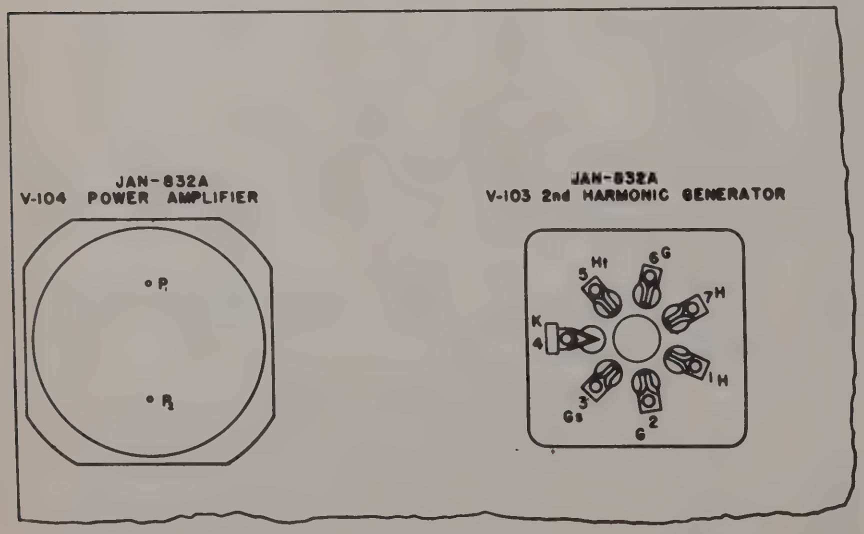
Gs
Ht
P_1
P_2

BOTTOM OF CHASSIS


JAN-832A
V-104 POWER AMPLIFIER
JAN-832A
V-103 2nd HARMONIC GENERATOR
P_1
P_2
Ht
H
K
G
Gs

NOTE:
V-107 AND V-108 CHANGED TO JAN-6L6WGB IN LATER PRODUCTION OF T-67B/ARC-3, T-312B/ARC-36. T-452/ARC-49 USES JAN-6L6WGB TUBES.

TOP OF CHASSIS

Figure 5-1. Radio Transmitter—Tube Socket Voltage Diagram

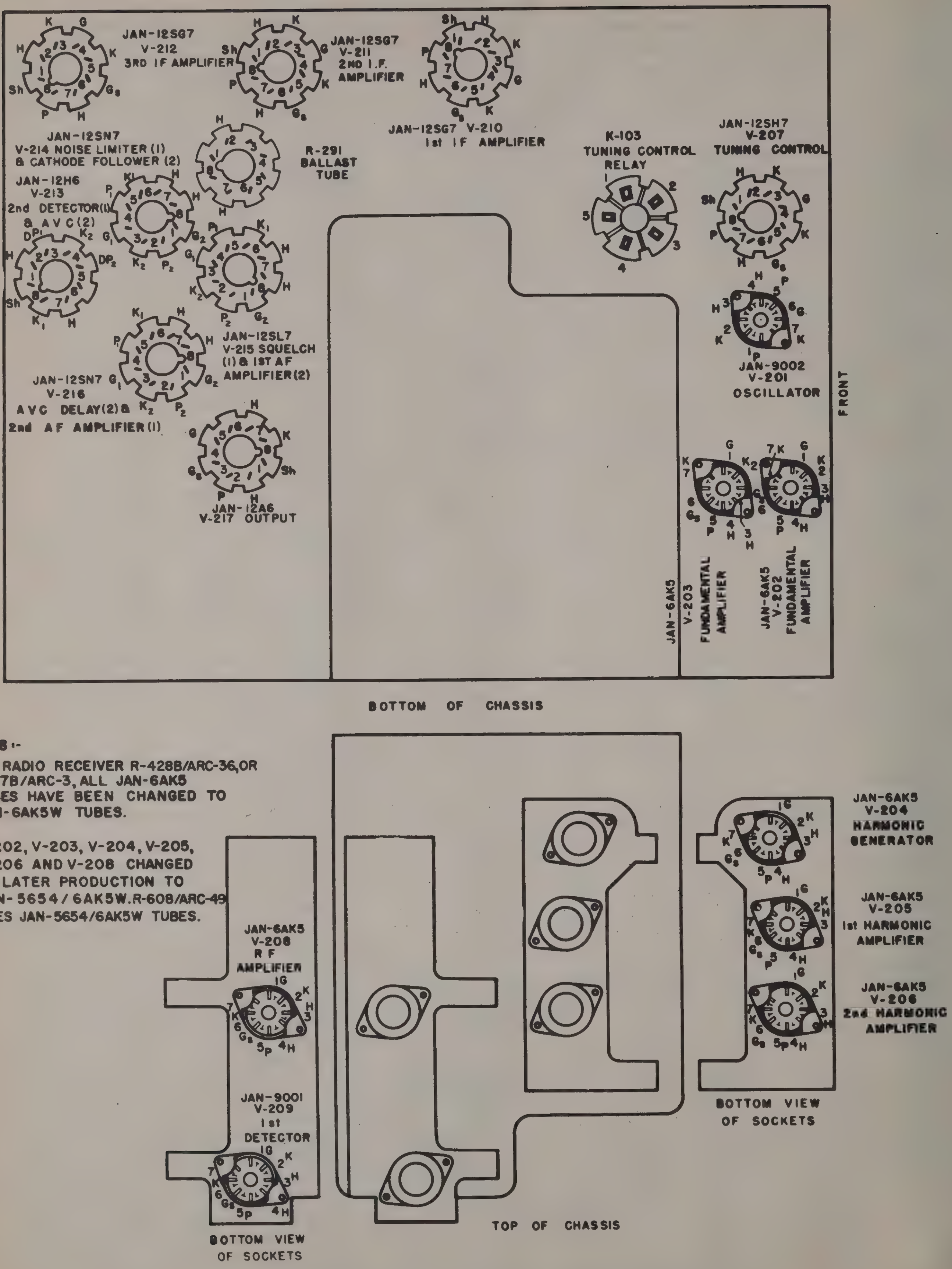
TABLE 5-5 (Continued)

(All measurements are from the pins indicated to ground.)

Pin No.	*Function*	*1000 Ohm/Volt Meter*		*20M Ohm/Volt Meter*	
		Volts	*Scale*	*Volts*	*Scale*
(V-201) JAN-9002-OSCILLATOR					
1	Plate	107.0	250.0	107.0	250.0
2	Cathode	0.0	7.5	0.0	10.0
3	Heater	21.0	50.0	21.0	50.0
4	Heater	28.0	50.0	28.0	50.0
5	Plate	107.0*	250.0	107.0*	250.0
6	Grid	0.0	7.5	0.0	10.0
7	Cathode	0.0	7.5	0.0	10.0
*Approximately 145 volts when operating.					
(V-202) JAN-6AK5-FUNDAMENTAL AMPLIFIER					
1	Grid	0.0	7.5	0.0	10.0
2	Cathode	4.0	7.5	4.0	10.0
3	Heater	21.0	50.0	21.0	50.0
4	Heater	14.0	50.0	14.0	50.0
5	Plate	194.0	250.0	196.0	250.0
6	Screen	143.0*	250.0	159.0*	250.0
7	Cathode	4.0	7.5	4.0	10.0
*100 to 160 volts when operating.					
(V-203) JAN-6AK5-FUNDAMENTAL AMPLIFIER					
1	Grid	0.0	7.5	0.0	10.0
2	Cathode	4.0	7.5	4.0	10.0
3	Heater	14.0	50.0	14.0	50.0
4	Heater	7.0	7.5	7.0	10.0
5	Plate	194.0	250.0	196.0	250.0
6	Screen	143.0*	250.0	159.0*	250.0
7	Cathode	4.0	7.5	4.0	10.0
*100 to 160 volts when operating.					
(V-204) JAN-6AK5-HARMONIC GENERATOR					
1	Grid	0.0	7.5	0.0	10.0
2	Cathode	0.0	7.5	0.0	10.0
3	Heater	7.0	7.5	7.0	10.0
4	Heater	0.0	7.5	0.0	10.0
5	Plate	197.0	250.0	198.0	250.0
6	Screen	28.0*	250.0	28.0*	250.0
7	Cathode	0.0	7.5	0.0	7.5
*Approximately 50 volts when operating.					
(V-205) JAN-6AK5-FIRST HARMONIC AMPLIFIER					
1	Grid	0.0	7.5	0.0	10.0
2	Cathode	0.0	7.5	0.0	10.0
3	Heater	28.0	50.0	28.0	50.0
4	Heater	21.0	50.0	21.0	50.0
5	Plate	191.0	250.0	191.0	250.0
6	Screen	51.0*	250.0	52.0*	250.0
7	Cathode	0.0	7.5	0.0	10.0
*Approximately 70 volts when operating.					
(V-206) JAN-6AK5-SECOND HARMONIC AMPLIFIER					
1	Grid	0.0	7.5	0.0	10.0
2	Cathode	0.0	7.5	0.0	10.0
3	Heater	21.0	50.0	21.0	50.0
4	Heater	14.0	50.0	14.0	50.0
5	Plate	194.0	250.0	194.0	250.0
6	Screen	33.0*	250.0	36.0*	250.0
7	Cathode	0.0	7.5	0.0	10.0
*Approximately 64 volts when operating.					
(V-207) JAN-12SH7 TUNING CONTROL					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	28.0	50.0	28.0	50.0
3	Cathode	0.0	7.5	0.0	10.0
4	Grid	0.0	7.5	0.0	10.0
5	Cathode	0.0	7.5	0.0	10.0
6	Screen	84.0*	250.0	84.0*	250.0
7	Heater	14.0	50.0	14.0	50.0
8	Plate	84.0*	250.0	84.0*	250.0
*Approximately 205 volts when operating.					

TABLE 5-5 (Continued)

Pin No.	*Function*	*1000 Ohm/Volt Meter*		*20M Ohm/Volt Meter*	
		Volts	*Scale*	*Volts*	*Scale*
(V-208) JAN-6AK5 RF AMPLIFIER					
1	Grid	0.0	7.5	0.0	10.0
2	Cathode	1.85	7.5	1.85	10.0
3	Heater	0.0	7.5	0.0	10.0
4	Heater	7.0	7.5	7.0	10.0
5	Plate	178.0	250.0	190.0	250.0
6	Screen	95.0	250.0	97.0	250.0
7	Cathode	1.85	7.5	1.85	7.5
(V-209) JAN-9001 FIRST DETECTOR					
1	Grid	0.0	7.5	0.0	10.0
2	Cathode	3.6	7.5	4.2	10.0
3	Heater	7.0	50.0	7.0	50.0
4	Heater	14.0	7.5	14.0	10.0
5	Plate	200.0	250.0	200.0	250.0
6	Screen	66.0	250.0	113.0	250.0
7	Cathode	36.0	7.5	4.2	10.0
(V-210) JAN-12SG7 IF AMPLIFIER					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	0.0	7.5	0.0	10.0
3	Cathode	1.2	7.5	1.2	10.0
4	Grid	0.0	7.5	0.0	10.0
5	Cathode	1.2	7.5	1.2	10.0
6	Screen	47.0	250.0	56.0	250.0
7	Heater	14.0	50.0	14.0	50.0
8	Plate	204.0	250.0	205.0	250.0
(V-211) JAN-12SG7 SECOND IF AMPLIFIER					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	14.0	50.0	14.0	50.0
3	Cathode	1.3	7.5	1.3	10.0
4	Grid	0.0	7.5	0.0	10.0
5	Cathode	1.3	7.5	1.3	10.0
6	Screen	54.0	250.0	63.0	250.0
7	Heater	28.0	50.0	28.0	50.0
8	Plate	200.0	250.0	200.0	250.0
(V-212) JAN-12SG7 THIRD IF AMPLIFIER					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	0.0	7.5	0.0	10.0
3	Cathode	2.73	7.5	2.73	7.5
4	Grid	0.0	7.5	0.0	10.0
5	Cathode	2.73	7.5	2.73	7.5
6	Screen	147.0	250.0	150.0	250.0
7	Heater	14.0	50.0	14.0	50.0
8	Plate	195.0	250.0	196.0	250.0
(V-213) JAN-12H6-SECOND DETECTOR AND AVC					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	0.0	7.5	0.0	10.0
3	Diode Plate	0.0	7.5	0.0	10.0
4	Cathode	9.5	50.0	9.5	50.0
5	Diode Plate	0.0	7.5	0.0	10.0
6	——	——	——	——	——
7	Heater	14.0	50.0	14.0	50.0
8	Cathode	0.0	7.5	0.0	10.0
(V-214) JAN-12SN7GT-NOISE LIMITER AND AF CATHODE FOLLOWER					
1	Grid 2	0.0	7.5	0.0	7.5
2	Plate 2	205.0	250.0	205.0	250.0
3	Cathode 2	6.1	7.5	6.1	10.0
4	Grid 1	0.0	7.5	0.0	10.0
5	Plate 1	0.0	7.5	0.0	10.0
6	Cathode 1	.15	7.5	.15	10.0
7	Heater	14.0	50.0	14.0	50.0
8	Heater	0.0	7.5	0.0	10.0


JAN-12SG7
V-212
3RD IF AMPLIFIER
JAN-12SG7
V-211
2ND I.F.
AMPLIFIER
JAN-12SG7 V-210
1st IF AMPLIFIER
JAN-12SN7
V-214 NOISE LIMITER (1)
& CATHODE FOLLOWER (2)
R-291
BALLAST
TUBE
K-103
TUNING CONTROL
RELAY
JAN-12SH7
V-207
TUNING CONTROL
JAN-12H6
V-213
2nd DETECTOR(1)
& A V C (2)
JAN-12SL7
V-215 SQUELCH
(1) & 1ST AF
AMPLIFIER (2)
JAN-12SN7
V-216
AVC DELAY(2) &
2nd AF AMPLIFIER (1)
JAN-12A6
V-217 OUTPUT
JAN-9002
V-201
OSCILLATOR
REAR
FRONT
JAN-6AK5
V-203
FUNDAMENTAL
AMPLIFIER
JAN-6AK5
V-202
FUNDAMENTAL
AMPLIFIER
BOTTOM OF CHASSIS
JAN-6AK5
V-208
R F
AMPLIFIER
JAN-9001
V-209
1st
DETECTOR
BOTTOM VIEW
OF SOCKETS
TOP OF CHASSIS
JAN-6AK5
V-204
HARMONIC
GENERATOR
JAN-6AK5
V-205
1st HARMONIC
AMPLIFIER
JAN-6AK5
V-206
2nd HARMONIC
AMPLIFIER
BOTTOM VIEW
OF SOCKETS
H
K
G
P
Sh
G_s
P_1
P_2
K_1
K_2
G_1
G_2
DP_1
DP_2
1
2
3
4
5
6
7
8

NOTES :-

1. ON RADIO RECEIVER R-428B/ARC-36, OR R-77B/ARC-3, ALL JAN-6AK5 TUBES HAVE BEEN CHANGED TO JAN-6AK5W TUBES.

2. V-202, V-203, V-204, V-205, V-206 AND V-208 CHANGED IN LATER PRODUCTION TO JAN-5654/6AK5W. R-608/ARC-49 USES JAN-5654/6AK5W TUBES.

Figure 5-2. Radio Receiver—Tube Socket Voltage Diagram

TABLE 5-5 (Continued)

Pin No.	Function	*1000 Ohm/Volt Meter*		*20M Ohm/Volt Meter*	
		Volts	*Scale*	*Volts*	*Scale*
(V-215) JAN-12SL7GT-SQUELCH AND FIRST AF AMPLIFIER					
1	Grid	6.0	50.0	6.5	50.0
2	Plate	73.0	250.0	93.0	250.0
3	Cathode 2	25.0	50.0	26.2	50.0
4	Grid 1	0.0	7.5	0.0	10.0
5	Plate 1	*	——	6.5	50.0
6	Cathode 1	0—1.6†	7.5	0—1.6†	10.0
7	Heater	28.0	50.0	28.0	50.0
8	Heater	14.0	50.0	14.0	50.0
*Cannot be measured with 1000 ohm-voltmeter. †Varies with setting of squelch control.					
(V-216) JAN-12SN7GT-AVC DELAY AND SECOND AF AMPLIFIER					
1	Grid 2	0.0	7.5	0.0	10.0
2	Plate 2	88.0	250.0	93.0	250.0
3	Cathode 2	3.0	7.5	3.0	7.5
4	Grid	0.0	7.5	0.0	10.0
5	Plate	205.0	250.0	205.0	250.0
6	Cathode	9.5	50.0	9.5	50.0
7	Heater	14.0	50.0	14.0	50.0
8	Heater	28.0	50.0	28.0	50.0
(V-217) JAN-12A6-AF OUTPUT					
1	Shield	0.0	7.5	0.0	10.0
2	Heater	14.0	50.0	14.0	50.0
3	Plate	190.0	250.0	190.0	250.0
4	Screen	205.0	250.0	205.0	250.0
5	Grid	0.0	7.5	0.0	10.0
6	——	——	——	——	——
7	Heater	0.0	7.5	0.0	10.0
8	Cathode	8.4	50.0	8.4	50.0
SENSITIVE RELAY SOCKET					
1	——	120.0*	250.0	120.0*	250.0
2	——	28.0†	50.0	28.0†	50.0
3	——	0.0	7.5	0.0	10.0
4	——	28.0	50.0	28.0	50.0
5	——	105.0*	250.0	105.0*	250.0
*190 volts operating. †When operating.					
(R-291) BALLAST TUBE					
1	——	0.0	7.5	0.0	7.5
2	Filament	28.0	50.0	28.0	50.0
3	——	0.0	7.5	0.0	7.5
4	——	0.0	7.5	0.0	7.5
5	——	0.0	7.5	0.0	7.5
6	——	0.0	7.5	0.0	7.5
7	Filament	12.0	50.0	12.0	50.0
8	——	0.0	7.5	0.0	7.5

c. RESISTANCE MEASUREMENTS.—Take the following measurements with no interconnection between units, tubes and dynamotors in sockets, and "OFF" button on control box or "ON-OFF" switch on a control panel in the "OFF" position. Looking at the armature end of the relay, with the contact springs below the coil, relay terminal one is located nearest the coil in the left hand side. The other terminals are numbered consecutively down each row from left to right. Terminal boards are numbered as shown in figures 5-3 and 5-4. When resistances are found to vary appreciably (more than ±15%) from the typical values given in the following table, this is sufficient reason for further examination of components associated with the particular circuit in question.

TABLE 5-6. RESISTANCE MEASUREMENTS FOR THE RADIO TRANSMITTER

On late production of Radio Transmitter T-67B/ARC-3 or T-312B/ARC-36, V-107 and V-108 were changed from JAN-6L6GA to JAN-6L6WGB. Radio Transmitter T-452/ARC-49 employs JAN-6L6WGB tubes.

	From	*To*	*Resistance in Ohms*
JAN-6V6GT (V-101)	Pin 1	Ground	0
	2	"	1.5
	3	"	76,000 Inf †
	4	"	190,000 98,000* Inf †
	5	"	5,100
	6	"	5,100
	7	"	0
	8	"	130 290**
JAN-6V6GT (V-102)	Pin 1	Ground	0
	2	"	2.5
	3	"	75,000 Inf †
	4	"	85,000 Inf †
	5	"	62,000
	6	"	62,000
	7	"	1.5
	8	"	450
JAN-832A (V-103)	Pin 1	Ground	2
	2	"	22,000
	3	"	125,000 Inf †
	4	"	980
	5	"	3
	6	"	22,000
	7	"	2.5
	P1	"	72,000 Inf †
	P2	"	72,000 Inf †
JAN-832A (V-104)	Pin 1	Ground	2
	2	"	11,000
	3	"	110,000 Inf †
	4	"	275
	5	"	1
	6	"	11,000
	7	"	0
	P1	"	72,000 Inf †
	P2	"	72,000 Inf †
JAN-12SH7 (V-105)	Pin 1	Ground	0
	2	"	0
	3	"	0 1,000 †
	4	"	66,000
	5	"	0 1,000 †
	6	"	17,000
	7	"	12
	8	"	74,000
JAN-6J5 (V-106)	Pin 1	Ground	0
	2	"	8.5
	3	"	76,000 Inf †
	4	"	0
	5	"	41,000
	6	"	Infinite
	7	"	8.5
	8	"	1,000

*For transmitters with M-1 Modification.
†For transmitters with M-3 Modification, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49.
**For Radio Transmitter T-452/ARC-49.

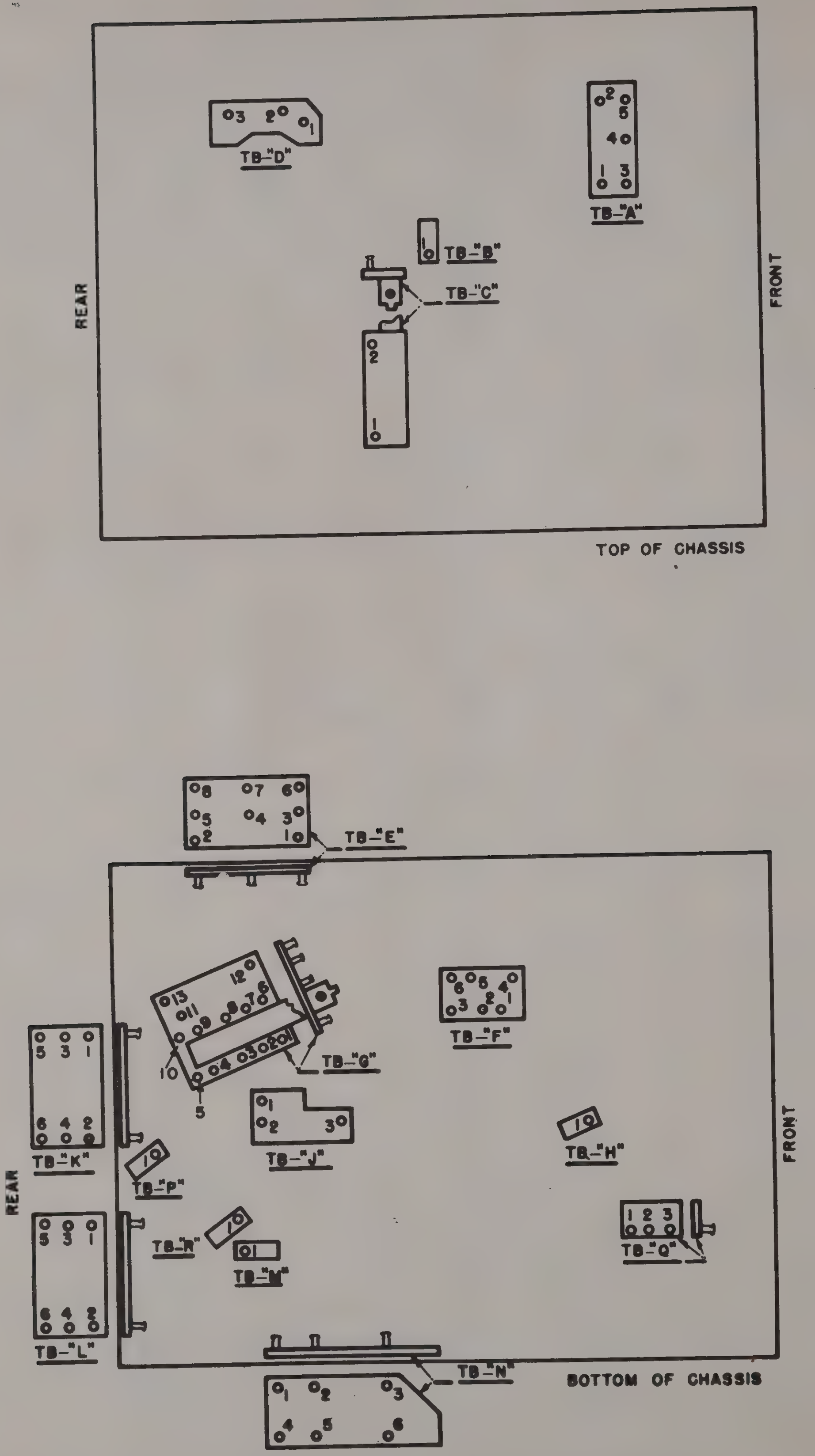

TB-"D"
TB-"A"
TB-"B"
TB-"C"
REAR
FRONT
TOP OF CHASSIS
TB-"E"
TB-"F"
TB-"G"
TB-"K"
TB-"J"
TB-"H"
TB-"P"
TB-"R"
TB-"M"
TB-"Q"
TB-"L"
TB-"N"
REAR
FRONT
BOTTOM OF CHASSIS

Figure 5-3. Radio Transmitter—Terminal Board Diagram

TABLE 5-6 (Continued)

	From	*To*	*Resistance in Ohms*
JAN-6L6GA (V-107)	Pin 1	Ground	0
	2	“	2.5
	3	“	72,000 Inf †
	4	“	74,000 Inf †
	5	“	300
	6	“	70,000 Inf †
	7	“	2.5
	8	“	245
JAN-6L6GA (V-108)	Pin 1	Ground	0
	2	“	2.5
	3	“	72,000 Inf †
	4	“	74,000 Inf †
	5	“	300
	6	“	10,000
	7	“	2.5
	8	“	245
JAN-6V6GT (V-109)	Pin 1	Ground	0
	2	“	0
	3	“	72,000 Inf †
	4	“	76,000 Inf †
	5	“	150,000
	6	“	Infinite
	7	“	2
	8	“	500
K-103	Pin 1	Ground	72,000
	2	“	2.5
	3	“	2.5
	4	“	45
	5	“	74,000
P-101	Pin 1	Ground	18 68 **
	2	“	39 68 **
	3	“	15 47 **
	4	“	0
	5	“	22
	6	“	630,000
	7	“	2.5
	8	“	72,000 Inf †
P-102 *Applicable only to the AN/ARC-3 or AN/ARC-36 Radio Receiver*	Pin 1	K-108, No. 11	275
	2	K-108, No. 10	275
	3	K-108, No. 2	275
	4	K-107, No. 10	275
	5	Ground	0
	6	K-108, No. 3	275
	7	K-107, No. 11	275
	8	K-108, No. 1	275
	9	K-107, No. 12	275
	10	K-102, No. 4	0
	11	Ground	118
	12	“	90
	13	“	2.5
	14	“	3
	15	“	58
	16	“	95
P-102 *Applicable only to the AN/ARC-49 Radio Receiver with the rotary solenoid switch set to channel A-1*	Pin 1	Pin 13	Infinite
	2	“ 13	Infinite
	3	“ 13	8
	4	“ 13	Infinite
	5	Ground	0
	6	Pin 13	Infinite
	7	“ 13	8
	8	“ 13	8
	9	“ 13	8
	10	K-102, No. 4	0

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†For Transmitters with M-3 Modification, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49.

TABLE 5-6 (Continued)

	From	*To*	*Resistance in Ohms*
	11	Ground	118
	12	“	90
	13	“	2.5
	14	“	3
	15	“	58
	16	“	95
P-103	Pin 1	Ground	Infinite
	2	“	140
	3	“	0
	4	“	Infinite
	5	“	“
	6	“	“
Terminal Board A	Terminal 1	Ground	14 47 **
	2	“	22,000
	3	“	0
	4	“	14 47 **
	5	“	0
Terminal Board B	Terminal 1	Ground	22,000
Terminal Board C	Terminal 1	Ground	105,000 Inf †
	2	“	72,000 Inf †
Terminal Board D	Terminal 1	Ground	6,000
	2	“	72,000 Inf †
	3	“	72,000 Inf †
Terminal Board E	Terminal 1	Ground	51,000
	2	“	39 68 **
	3	“	39 68 **
	4	“	0
	5	“	1,000
	6	“	5,000
	7	“	18
	8	“	0
Terminal Board F	Terminal 1	Ground	0
	2	“	0
	3	“	75,000 Inf †
	4	“	5,100
	5	“	51,000
	6	“	0
Terminal Board G	Terminal 1	Ground	74,000 Inf †
	2	“	180,000
	3	“	180,000
	4	“	180,000
	5	“	650,000
	6	“	Infinite
	7	“	0
	8	“	190,000
	9	“	250,000
	10	“	180,000
	11	“	0
	12	“	72,000
	13	“	17,000
Terminal Board H	Terminal 1	Ground	100
Terminal Board J	Terminal 1	Ground	Infinite
	2	T.B.J, No. 1	150
	3	T.B.J, No. 1	115

**For Radio Transmitter T-452/ARC-49.

†For Transmitters with M-3 Modification, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49.

TABLE 5-6 (Continued)

	From	*To*	*Resistance in Ohms*
Terminal Board K	Terminal 1	Ground	180,000 * Inf † 98,000 **
	2	"	72,000 * Inf † 74,000 **
	3	"	180,000 * Inf † 98,000 **
	4	"	72,000 * Inf † 74,000 **
	5	"	84,000 * Inf †
	6	"	74,000 * Inf †
Terminal Board L	Terminal 1	Ground	108,000 Inf †
	2	"	72,000 Inf †
	3	"	108,000 Inf †
	4	"	72,000 Inf †
	5	"	6,100
	6	"	15,000
Terminal Board M	Terminal 1	Ground	72,000 Inf †
Terminal Board N	Terminal 1	Ground	35,000
	2	"	35,000
	3	"	76,000 Inf †
	4	"	0
	5	"	76,000 Inf †
	6	"	76,000 Inf †
Terminal Board P	Terminal 1	Ground	640,000
Terminal Board Q	Terminal 1	Ground	61
	2	"	0
	3	"	40
Terminal Board R	Terminal 1	Ground	Infinite

*For early production transmitters.
**For Radio Transmitter T-452/ARC-49.
†For Transmitters with M-3 Modification, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 or T-452/ARC-49.

TABLE 5-7. RESISTANCE MEASUREMENTS FOR THE RADIO RECEIVER

Note

On Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 all JAN-6AK5 tubes were changed to JAN-6AK5W. A later production change converted the JAN-6AK5W tubes to JAN-5654/6AK5W. Radio Receiver R-608/ARC-49 employs JAN-5654/6AK5W tubes. All tubes are electrically and mechanically interchangeable.

TABLE 5-7 (Continued)

	From	*To*	*Resistance in Ohms*
JAN-9002 (V-201)	Pin 1	Ground	52,000
	2	"	0
	3	"	6
	4	"	3
	5	"	52,000
	6	"	56,000
	7	"	0
JAN-6AK5 (V-202)	Pin 1	Ground	330,000
	2	"	680
	3	"	6
	4	"	6
	5	"	41,000
	6	"	79,000
	7	"	680
JAN-6AK5 (V-203)	Pin 1	Ground	330,000
	2	"	680
	3	"	6
	4	"	4
	5	"	41,000
	6	"	79,000
	7	"	680
JAN-6AK5 (V-204)	Pin 1	Ground	3.3 meg
	2	"	0
	3	"	0
	4	"	4
	5	"	42,000
	6	"	72,000
	7	"	0
JAN-6AK5 (V-205)	Pin 1	Ground	280,000
	2	"	0
	3	"	6
	4	"	3
	5	"	42,000
	6	"	141,000
	7	"	0
JAN-6AK5 (V-206)	Pin 1	Ground	480,000
	2	"	0
	3	"	6
	4	"	6
	5	"	42,000
	6	"	260,000
	7	"	0
JAN-12SH7 (V-207)	Pin 1	Ground	0
	2	"	24
	3	"	0
	4	"	735,000
	5	"	0
	6	"	53,000
	7	"	12
	8	"	53,000
JAN-6AK5 (V-208)	Pin 1	Ground	940,000
	2	"	220
	3	"	0
	4	"	4
	5	"	42,000
	6	"	31,000
	7	"	220
JAN-9001 (V-209)	Pin 1	Ground	110,000
	2	"	6,800
	3	"	4
	4	"	6
	5	"	41,000
	6	"	370,000
	7	"	6,800
JAN-12SG7 (V-210)	Pin 1	Ground	0
	2	"	0
	3	"	390
	4	"	940,000
	5	"	390
	6	"	190,000
	7	"	12
	8	"	41,000
JAN-12SG7 (V-211)	Pin 1	Ground	0
	2	"	7
	3	"	390
	4	"	840,000
	5	"	390
	6	"	190,000
	7	"	3
	8	"	41,000

TABLE 5-7 (Continued)

	From	*To*	*Resistance in Ohms*
JAN-12SG7 (V-212)	Pin 1	Ground	0
	2	“	0
	3	“	270
	4	“	0
	5	“	270
	6	“	58,000
	7	“	7
	8	“	41,000
JAN-12H6 (V-213)	Pin 1	Ground	0
	2	“	0
	3	“	470,000
	4	“	8,200
	5	“	100,000
	6	“	0
	7	“	4
	8	“	0
JAN-12SN7GT (V-214)	Pin 1	Ground	1.85 meg
	1 *	“	1.33 meg
	2	“	40,000
	3	“	1,000
	4	“	39,000
	4 *	“	47,000
	5	“	39,000
	5 *	“	47,000
	6	“	930,000
	7	“	4
	8	“	0
JAN-12SL7GT (V-215)	Pin 1	Ground	2.4 meg
	2	“	335,000 365,000 **
	3	“	11,000
	4	“	550,000
	4 *	“	500,000
	5	“	2.2 meg
	6	“	(0-700)
	7	“	3
	8	“	7
JAN-12SL7GT (V-216)	Pin 1	Ground	470,000
	2	“	87,000
	3	“	1,500
	4	“	1.85 meg
	5	“	40,000
	6	“	8,200
	7	“	4
	8	“	3
JAN-12A6 (V-217)	Pin 1	Ground	0
	2	“	7
	3	“	41,000
	4	“	40,000
	5	“	470,000
	6	“	10
	7	“	0
	8	“	330
K-201	Pin 1	Ground	52,600
	2	“	0
	3	“	0
	4	“	47
	5	“	50,000

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*Applies only to models of Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 with serial numbers greater than C-10,995. (The serial number of the AN/ARC-36 Radio Receiver is regarded as identical to the serial number of the basic AN/ARC-3 Radio Receiver. This serial number can be found on the AN/ARC-3 Radio Receiver nameplate which is located directly under the AN/ARC-36 Radio Receiver nameplate.)

**For Radio Receiver R-608/ARC-49.

TABLE 5-7 (Continued)

	From	*To*	*Resistance in Ohms*
R-291 (Ballast Tube)	1	Ground	Infinite
	2	“	3
	3	“	Infinite
	4	“	840,000
	5	“	840,000
	6	“	940,000
	7	“	4
	8	“	740,000
P-201	Pin 1	Ground	2,200
	2	“	1,000
	3	“	10,000
	4	“	0
	5	“	10,000
	6	“	10,000
	7	“	3
	8	“	40,000
P-202 *Applicable only to the AN/ARC-3 or AN/ARC-36 Radio Receiver*	Pin 1	K-204, No. 2	275
	2	K-204, No. 1	275
	3	K-205, No. 10	275
	4	K-205, No. 11	275
	5	K-205, No. 12	275
	6	K-205, No. 1	275
	7	Ground	0
	8	K-205, No. 2	275
	9	K-205, No. 3	275
	10	Ground	Infinite
	11	“	40,000
	12	“	24
	13	“	740,000
	14	“	1,800
	15	“	3
	16	“	10
	17	“	60
	18	“	Infinite
P-202 *Applicable to the AN/ARC-49 Radio Receiver with the rotary solenoid switch set to channel A-1*	Pin 1	Pin 15	Infinite
	2	15	Infinite
	3	15	8
	4	15	Infinite
	5	15	Infinite
	6	15	8
	7	Ground	0
	8	Pin 15	8
	9	15	8
	10	Ground	Infinite
	11	“	40,000
	12	“	24
	13	“	740,000
	14	“	1,800
	15	“	3
	16	“	10
	17	“	60
	18	“	Infinite
Terminal Board A	Terminal 1	Ground	870,000
	2	“	40,000
	3	“	108,000
	4	“	40,000
	5	“	40,000
Terminal Board B	Terminal 1	Ground	840,000
	2	“	58,000
	3	“	40,000
	4	“	40,000
Terminal Board C	Terminal 1	Ground	5.5

TABLE 5-7 (Continued)

	From	To	Resistance in Ohms
Terminal Board D	Terminal 1	Ground	40,000
	2	“	108,000
	3	“	3
	4	“	5.5
	5	“	3
	6	“	40,000
	7	“	47,000
	8	“	40,000
	9	“	52,000
Terminal Board E	Terminal 1	Ground	41,000
	2	“	40,000
	3	“	41,000
	4	“	40,000
Terminal Board F	Terminal 1	Ground	1,000
	2	“	40,000
	3	“	165,000
	4	“	108,000 Infinite **
	5	“	555,000
Terminal Board G	Terminal 1	Ground	7
	2	“	3
	3	“	47
Terminal Board H	Terminal 1	Ground	0
	2	“	(0-700)
	3	“	11,000
	4	“	4
	5	“	0
	6	“	11,000
	7	“	1,800
	8	“	555,000
	9	“	11,000
	10	“	2.2 meg
	11	“	40,000
	12	“	550,000
	12 *	“	500,000
	13	“	40,000
Terminal Board J	Terminal 1	Ground	Infinite
	2	“	1,000

*Applies only to models of Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 with serial numbers greater than C-10,995. (The serial number of the AN/ARC-36 Radio Receiver is regarded as identical to the serial number of the basic AN/ARC-3 Radio Receiver. This serial number can be found on the AN/ARC-3 Radio Receiver nameplate which is located directly under the AN/ARC-36 Radio Receiver nameplate.)

**For Radio Receiver R-608/ARC-49.

TABLE 5-8. RESISTANCE MEASUREMENTS FOR POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3

	From	To	Resistance in Ohms
P-401	Pin 1	P-403 pin C	225
	2	Ground	0
	3	P-403 pin C	225
P-402	Pin 1	P-403 pin V	0
	2	P-403 pin K	0
	3	P-403 pin Q	0
	4	P-403 pin R	0
	5	Ground	0
	6	P-403 pin W	0
	7	P-403 pin Y	0
	8	P-403 pin X	0
P-402	Pin 9	P-403 pin Z	0
	10	Ground	185
	11	P-403 pin A	0
	12	Ground	190
	13	“	1.5
	14	K-406 term. 2	0
	15	Ground	Infinite
	16	“	150
P-403	Pin B	Ground	150
	E	“	0
	J	“	0
	M	“	400 160 *
	P	“	1.5
P-404	Pin 1	P-403 pin V	0
	2	P-403 pin K	0
	3	P-403 pin Q	0
	4	P-403 pin R	0
	5	P-403 pin W	0
	6	P-403 pin Y	0
	7	Ground	0
	8	P-403 pin X	0
	9	P-403 pin Z	0
	10	Ground	0
	11	“	400
	12	“	190
	13	“	150
	14	P-403 pin D	0
	15	Ground	1.5
	16	P-403 pin D	0
	17	P-403 pin A	0
	18	Ground	Infinite
P-405	Pin 1	Ground	1.5
	2	“	0
	3	“	85
P-406	Pin 1	Ground	15
	2	“	0
	3	“	140

*For Power Junction Box J-68/ARC-3 with M-2 Modification or for J-68A/ARC-3.

TABLE 5-9. RESISTANCE MEASUREMENTS FOR CONTROL BOX C-118/ARC-3

	From	To	Resistance in Ohms
P-501	Pin A	J-501 Term 1	0
	B	J-501 Term 2	0
	C	S-501 J	0
	D	J-502	0
	E	Ground	0
	F	J-501 D	1,000
	G	Ground	270
	H	J-501 F	0
	J	S-501 common	0
	K	S-501 B	0
	Q	S-501 C	0
	R	S-501 D	0
	U	Ground	Infinite
	V	S-501 A	0
	W	S-501 E	0
	X	S-501 G	0
	Y	S-501 F	0
	Z	S-501 H	0

TABLE 5-10. RESISTANCE MEASUREMENTS FOR CONTROL BOX C-118A/ARC-3

From		To	*Resistance in Ohms*
P-501	Pin A	J-501 Term 1	0
	B	J-501 Term 2	0
	C	S-501 common	0
	D	J-502	0
	E	Ground	0
	F	P-501 D	1000
	G	Ground	270
	H	P-501 F	0
	J	S-501 Top common	0
	K	S-501 B	0
	Q	S-501 C	0
	R	S-501 D	0
	U	Ground	Infinite
	V	S-501 A	0
	W	S-501 E	0
	X	S-501 G	0
	Y	S-501 F	0
	Z	S-501 H	0
S-501 J		Ground	0
Ground		Middle common	Infinite

TABLE 5-11. RESISTANCE MEASUREMENTS FOR CONTROL PANEL C-404/A OR C-404A/A

	From	To	*Resistance in Ohms*
Red Cable (Cable disconnected from terminal board)	Terminal 161	Ground	Infinite
	162	“	0
	167	“	1047-47
	166	“	1047
	149	“	Infinite
	250	“	80
White Cable (Cable disconnected from terminal board)	Terminal 141	Ground	Infinite
	142	“	Infinite
	143	“	Infinite
	144	“	Infinite
	145	“	Infinite
	146	“	Infinite
	147	“	Infinite
	148	“	Infinite
	163	“	Infinite

Note

Control Panel C-404/A does not include terminal 250.

TABLE 5-12. RESISTANCE MEASUREMENTS FOR CONTROL, RADIO SET C-1400/ARC-49

Note

Set selector switches to channel A-12.

From		To	*Resistance in Ohms*
P-601	Pin 1	Ground	0
	2	“	Infinite
	3	“	Infinite
	4	“	Infinite
	5	“	0
	6	“	Infinite
	7	“	0
	8	“	0
	9	“	0
	10	Pin 17	1047
	11	17	Infinite
	12	17	47-1047
	17	Ground	Infinite
	18	“	Infinite
P-602	Pin 1	Ground	0
	2	“	Infinite
	3	“	Infinite
	4	“	Infinite
	6	“	0
	7	“	Infinite
	8	“	0
	9	“	0
	13	“	80

TABLE 5-13. 1000-CYCLE INDUCTANCE OF CHOKES

	Inductance	*A-C Voltage*	*D-C in Winding*
L-402	.55 m	15 v	325 ma.
L-403	1.0 m	15 v	125 ma.

TABLE 5-14. RESISTANCE OF CHOKES AND TRANSFORMERS

Symbol	*Function*	*Winding*	*D-C Resistance*
T-101	Tone Oscillator	Whole	220 ohms
		Tap	90 “
T-102	Driver	Primary	1,250 “
		Secondary	650 “
T-103	Microphone	Primary	18 “
		Secondary	1,400 “
T-104	Modulator	Primary	900 “
		Secondary	270 “
T-105	Sidetone	Primary	1,300 “
		Secondary	67 “
		Tap	3.8 “
T-206	Output	Primary	550 “
		Secondary	62 “
		Tap	10.5 “
L-401	Transmitter “B” Choke		45 “
L-404	Receiver “B” Choke		78 “

TABLE 5-15. RESISTANCE OF ROTARY SOLENOID MOTORS

Symbol	*Function*	*Winding*	*D.C. Resistance*
B-102	Crystal Selector	Whole	8 ohms
B-103	Channel Selector	Whole	8 "
B-202	Crystal Selector	Whole	8 "
B-203	Channel Selector	Whole	8 "

4. REPLACEMENT OF TUBES, FUSES, DYNAMOTOR BRUSHES, AND CRYSTALS.

Note

All tubes of a given type supplied with the equipment shall be consumed prior to employment of tubes from general stock.

a. VACUUM TUBES.—Remove the top covers from the transmitter and receiver. This will give access to all tubes except the JAN-832A (V-103) tube of the transmitter. To replace this tube, the small metal plate on the bottom of the transmitter must be removed.

WARNING

Always turn off power before changing tubes.

(1) The best check on a receiving or transmitting tube is by directly comparing it in its own socket under actual operating conditions with a new tube of known quality.

(2) A visual check of individual tubes may be made as follows:

(*a*) In metal tubes, check for failure to heat. In glass tubes, look for failure to light. Either of the above failures indicates a burned out filament, in which case replace the tube. The filaments of some tubes are wired in series. In order to find which tube may have a defective filament, replace the tubes in the group, one at a time. The groups in series are as follows:

1. TRANSMITTER.

Note

On late production of Radio Transmitter T-67B/ARC-3 or T-312B/ARC-36, V-107 and V-108 were changed from JAN-6L6GA to JAN-6L6WGB. Radio Transmitter T-452/ARC-49 employs JAN-6L6WGB tubes.

a. The JAN-832A tubes, V-103 and V-104.

b. Two JAN-6L6GA tubes, V-107 and V-108, and two JAN-6V6 tubes, V-101 and V-102.

c. One JAN-6V6 tube, V-109 and one JAN-6J5 tube, V-106.

2. RECEIVER.

Note

On Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 all JAN-6AK5 tubes were changed to JAN-6AK5W. A later production change converted the JAN-6AK5W tubes to JAN-5654/6AK5W. Radio Receiver R-608/ARC-49 employs JAN-5654/6AK5W tubes. All types are electrically and mechanically interchangeable.

a. Three JAN-6AK5 tubes, V-205, V-206, and V-208, and one JAN-9001 tube, V-209.

b. Three JAN-6AK5 tubes, V-202, V-203, V-204, and one JAN-9002 tube, V-201.

c. One JAN-12SH7 tube, V-207, and one JAN-12SG7 tube, V-210.

d. Two JAN-12SG7 tubes, V-211 and V-212.

e. One JAN-12SN7GT tube, V-216 and one JAN-12H6 tube, V-213.

f. One JAN-12SL7GT tube, V-215 and one JAN-12A6 tube, V-217.

g. One JAN-12SN7 tube, V-214 and a ballast tube R-291.

(*b*) In glass tubes look for an abnormal blue haze on the inside surface. Also inspect for blue haze or white glowing spots between the elements or red spots on plate of tube. This indicates a defective tube, abnormal circuit conditions, or overloading.

(*c*) If all tubes light and no other fault is indicated, replace all tubes, one at a time, as indicated in the trouble charts.

(*d*) Replacing the JAN-832A tubes in the transmitter may in some cases necessitate realigning the set. Instructions are given in paragraph 8, this section.

CAUTION

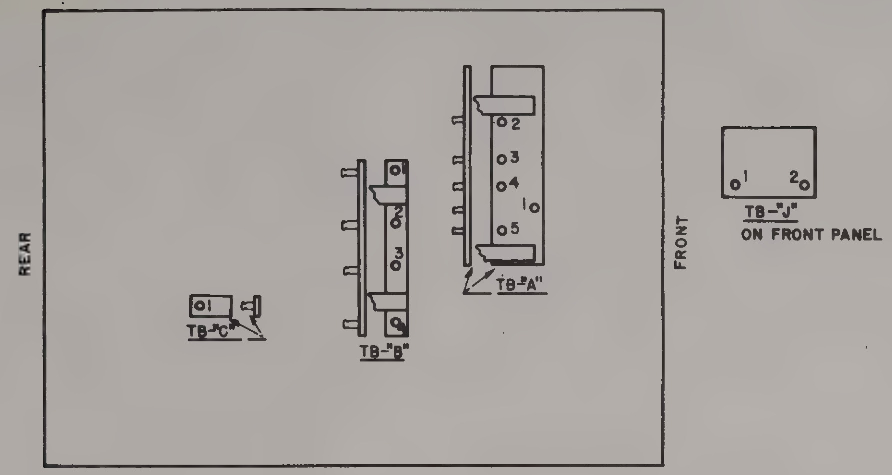
Do not operate this set on voltages higher than 28 volts any more than necessary. The life of the miniature tubes is considerably shortened by doing so.

b. FUSE REPLACEMENT.

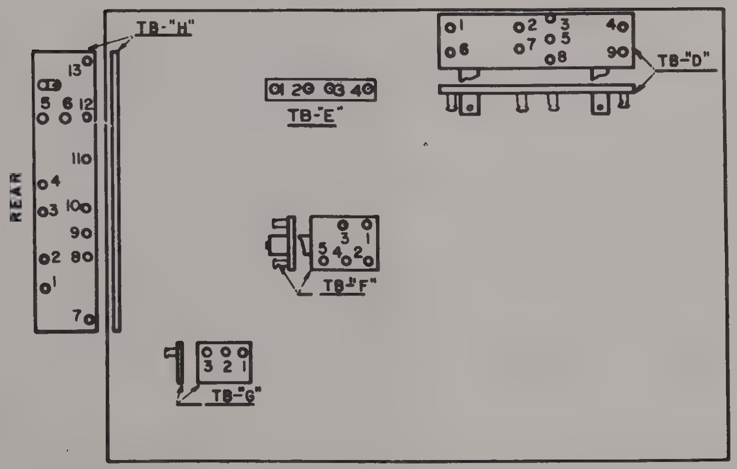
(1) The fuses for the high voltage circuit of the transmitter and receiver, together with a spare for each, are located under metal covers on top of the power junction box. The transmitter fuse is at the left end of the transmitter dynamotor. The receiver fuse is at the right end of the receiver dynamotor. These covers may be removed by releasing the snap-slide on top of each.

Note

The production change converting J-68/ARC-3 to J-68A/ARC-3 changed the fuse holders from a clip type to a panel mount type. (See figs. 6-37 and 6-39.)



TOP OF CHASSIS



BOTTOM OF CHASSIS

NOTE
ON RADIO RECEIVER R-77B/ARC-3, R-428/ARC-36 TERMINAL "12" ON TB "H" IS CHANGED TO NEW LOCATION DIRECTLY ABOVE TERMINAL "5". RADIO RECEIVER R-608/ARC-49 HAS TERMINAL "12" AT THE NEW LOCATION.

Figure 5-4. Radio Receiver—Terminal Board Diagram

(2) A visual check will indicate the condition of the fuse. The spare fuse for replacement of a burned out fuse is carried in a holder adjacent to each operating fuse and is so marked. The larger dynamotor, D-401, supplies high voltage to the transmitter and the smaller dynamotor, D-402, supplies high voltage to the receiver. (See figs. 1-22 and 8-33.) The fuses located next to either dynamotor protect that dynamotor in case of short circuit or overload in the transmitter or receiver respectively. Repeated burnouts indicate a defective tube, transmitter, receiver or some other cause of high current; such trouble must be corrected.

c. DYNAMOTOR BRUSH REPLACEMENT.

(1) Low or erratic high voltage, or excessive noise in the headsets, usually indicates defective dynamotor brushes. Remove the end covers on the dynamotor, unscrew the bakelite brush-holder caps, and examine the brushes. Replace any brush worn in excess of one-half its original length. A complete set of new brushes will be found in the small metal can mounted on a bracket be-

neath the high voltage end cover on both dynamotors.

(2) Replace the drive motor brushes when worn in excess of one-half their original length. Two metal screws, in the housing of the low-voltage end of the dynamotor, provide access to the brushes.

d. CRYSTAL REPLACEMENT.

(1) To gain access to the crystal compartment of the AN/ARC-3 or AN/ARC-49 Radio Transmitter, turn the winged Dzus fastener of the hinged door on the front panel. The AN/ARC-36 Radio Transmitter crystal compartment cover is not hinged but uses three Dzus fasteners.

(2) To gain access to the crystal compartment of the AN/ARC-3 or AN/ARC-49 Radio Receiver, depress the "PUSH" lever on the hinged cover. The AN/ARC-36 Radio Receiver crystal compartment cover is not hinged. It is necessary to release the latch and turn two Dzus fasteners.

(3) Remove the defective crystal and replace with a new one of the same frequency. Re-cycle by pressing any push button of the control box, then push the desired push-button. If using a control panel recycling is accomplished by turning the channel selector switch to another channel and then returning to the desired channel.

(4) Check the activity of defective crystals according to the procedure outlined in paragraph 6, this section.

5. SPECIAL MAINTENANCE OPERATIONS AND ADJUSTMENTS.

a. ADJUSTMENT OF CAM O-101 (TRANSMITTER).—It will be necessary to adjust cam O-101 should it become loose or if the variable capacitors require realignment. Adjust each, following the outline below.

(1) Center the four aligning adjustments (green screwdriver slots on variable capacitors), "1," "2," "3" and "4T." (See fig. 5-5.)

(2) Turn the variable capacitors to maximum capacity (plates fully meshed) by holding solenoid K-105 closed and turning the shaft by hand.

(3) Loosen the set screws holding the cam and set the mark "C" nearest the "100" mark on the cam at the pointer. Tighten the set screw.

(4) Realign the set. (Refer to par. 8, this sec.)

b. ADJUSTMENT OF CAM O-202 (RECEIVER). Adjustment of cam O-202 will be required should it become loose and cause improper operation of switch S-202. Follow the outline below when this is necessary.

(1) This cam is located on the three-gang capacitor.

(2) Remove the wrap-around cover from the set.

(3) Tune the receiver so that the variable capacitor plates are at maximum and the frequency indicating dial is at the "END" mark between "156" and "100" in the uncalibrated portion.

(4) For the AN/ARC-3 or AN/ARC-36 Radio Receiver loosen the set screws and rotate the cam to the position of maximum opening of switch S-202.

For the AN/ARC-49 Radio Receiver loosen the set screw and rotate the cam to the position of maximum overtravel in the closing of switch S-202.

(5) Tighten the set screws.

(6) Replace the wrap-around cover.

c. ADJUSTMENT OF CAM O-201 (RECEIVER).—Adjustment of cam O-201 will be required should it become loose and cause improper operation of switch S-201. Follow the outline below when this is necessary.

(1) This cam is located on the four-gang capacitor.

(2) Remove the wrap-around cover from the set.

(3) Tune the receiver so that the variable capacitor plates are at maximum and the frequency indicating dial is at the "END" mark between "156" and "100," in the uncalibrated portion.

(4) Hold the armature of solenoid relay K-202 closed by hand and turn the knurled knob on the motor, counterclockwise, so that dial moves toward the "100" mark.

(5) Continue to turn the knob until the dial has rotated through the entire calibrated portion and again comes to the "END" mark between "156" and "100." The variable capacitors are now at minimum capacity.

(6) Loosen the set screws on the cam and turn the cam counterclockwise until it just starts to open switch S-201.

(7) Tighten the set screws.

(8) Replace the wrap-around cover.

d. MANUAL TUNING.—In case of motor failure and in some cases of relay failure, the equipment may be tuned manually as described below.

WARNING

Manual tuning must be done while the equipment is in operation. This involves possible contact with high voltages which are dangerous to life. Personnel must observe safety regulations at all times.

(1) TRANSMITTER.

(*a*) Remove the top cover.

(*b*) Press the proper push button on the control box for the channel desired. If using a control panel set the "ON-OFF" switch to the "ON" position and set the channel selector switch or switches to the desired channel.

(*c*) Manually open cam switch S-101B, on the front variable capacitor, and immediately let close. This allows relays K-107 and K-108 to open. On the AN/ARC-49 Radio Transmitter relay K-108 does not open.

(*d*) Turn the knurled knob on top of the motor until the dial adjacent to the cam switch indicates the desired frequency. The dial may be rotated in either direction, but do not turn beyond points "C."

(*e*) When the transmitter is tuned to the desired frequency, the clutch will be released automatically and the dial will stop rotating.

(2) RECEIVER.

(*a*) Remove the top cover.

(*b*) Press the proper push button on the control box for the desired channel. If using a control panel set the "ON-OFF" switch to the "ON" position and set the channel selector switch or switches to the desired channel.

(*c*) For the AN/ARC-3 or AN/ARC-36 Radio Receiver manually open cam switch S-202, on the side of the three-gang capacitor, and immediately let it close. This allows relays K-204 and K-205 to open.

For the AN/ARC-49 Radio Receiver manually close cam switch S-202, on the side of the three-gang capacitor, and immediately let it open. This allows relay K-204 to close and relay K-205 to open.

(*d*) Turn the knurled knob on top of motor B-201, until the dial on the front panel indicates the desired frequency. The dial may be rotated in either direction, but should not be turned beyond the end calibration markings ("100" & "156").

(*e*) When the receiver is tuned to the desired frequency, the clutch will be released automatically and the dial will stop rotating.

(*f*) Replace the cover when tuning operations have been completed.

e. RELAYS.—When relay contacts become dirty or discolored, clean with carbon tetrachloride using a small brush. Do not attempt to adjust relays until it has been determined that there is a definite need for adjustment, then proceed as follows:

(1) Place the forming tool on the contact blade of the relay.

(2) Gently bend the spring in such a direction that it will bring the contacts firmly together in the closed position. Do not bend the blades at a sharp angle.

(3) Check for proper relay adjustment by gently pressing the other contact blade in such a direction as to open the circuit and observe that the contact "follows" for a short distance.

Note

Never use an abrasive on relay contacts. Use a burnishing tool to clean contacts only in emergencies and after the relay has actually failed. Replace the relay as soon as convenient after burnishing.

f. CAM O-101 (TRANSMITTER).

(1) DISASSEMBLY.—Loosen the two set screws and remove the cam from the shaft.

(2) REASSEMBLY.

(*a*) Center the four aligning adjustments (green screwdriver slots on the variable capacitors) "1," "2," "3," and "4T." (See fig. 5-5.)

(*b*) Turn the variable capacitors to maximum capacity (plates fully meshed) by holding solenoid K-202 closed and turning the shaft by hand.

(*c*) Replace cam on shaft. Set the mark "C" nearest the "100" mark at the pointer. Tighten the set screws.

(*d*) Realign the set. (Refer to par. 8, this sec.)

g. VARIABLE CAPACITOR C-115 (TRANSMITTER).

(1) DISASSEMBLY.

(*a*) Remove the cam as described in paragraph 5*f*(1), this section.

(*b*) Remove the two screws in the top plate and lift it off.

(*c*) Disconnect and tag the two wires from the socket of JAN-832A (V-103) and the wire from the small terminal board.

(*d*) Loosen the two set screws holding the shaft to the coupling, beneath variable capacitor.

(*e*) Remove the hexagon stud and the two screws holding the base plate to the chassis.

(*f*) Lift the entire assembly off the chassis but do not force it. Take care not to damage any other component during removal.

(2) REASSEMBLY.

(*a*) Center the four aligning adjustments. (See fig. 5-5.)

(*b*) Turn all capacitors to maximum capacity (plates fully meshed).

(*c*) Put the capacitor assembly into position and replace the stud and two screws.

(*d*) With the capacitor plates set for maximum capacity, tighten the two set screws securing the shaft into the coupling.

(*e*) For reconnection reverse steps (*a*) through (*c*) listed in disassembly.

(*f*) Realign the set. (Refer to par. 8, this sec.)

h. VARIABLE CAPACITOR C-129 (TRANSMITTER).

(1) DISASSEMBLY.

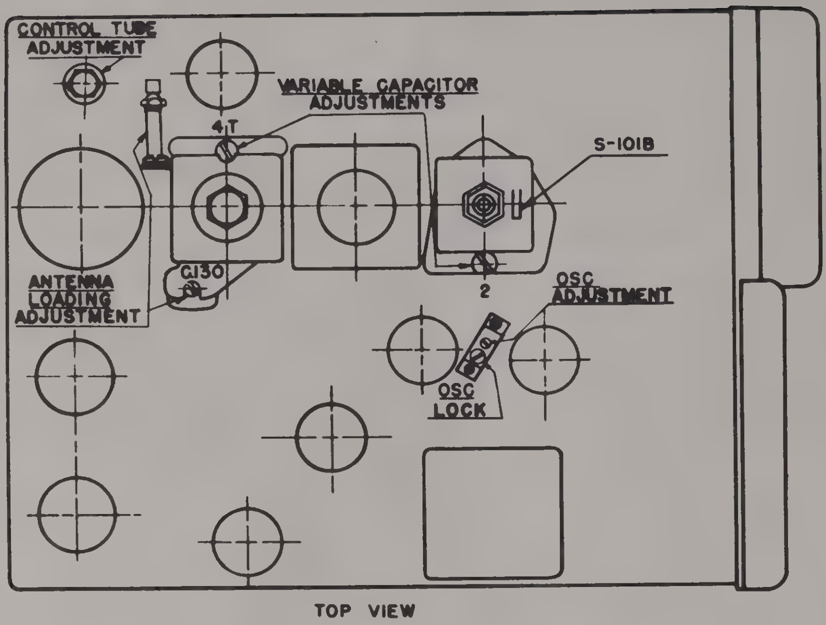
(*a*) Disconnect and tag the plate leads from JAN-832A (V-104) and the wire from the center of the coil to the terminal board.

(*b*) Disconnect the coaxial cable from antenna coil board.

(*c*) Loosen the two set screws holding the shaft to the coupling, beneath the variable capacitor.

(*d*) Remove the three screws holding the base plate to the chassis.

(*e*) Lift entire assembly off the chassis but do not force it. Take care not to damage any other component during removal.


CONTROL TUBE ADJUSTMENT
VARIABLE CAPACITOR ADJUSTMENTS
4 T
S-101B
C130
ANTENNA LOADING ADJUSTMENT
2
OSC ADJUSTMENT
OSC LOCK
TOP VIEW

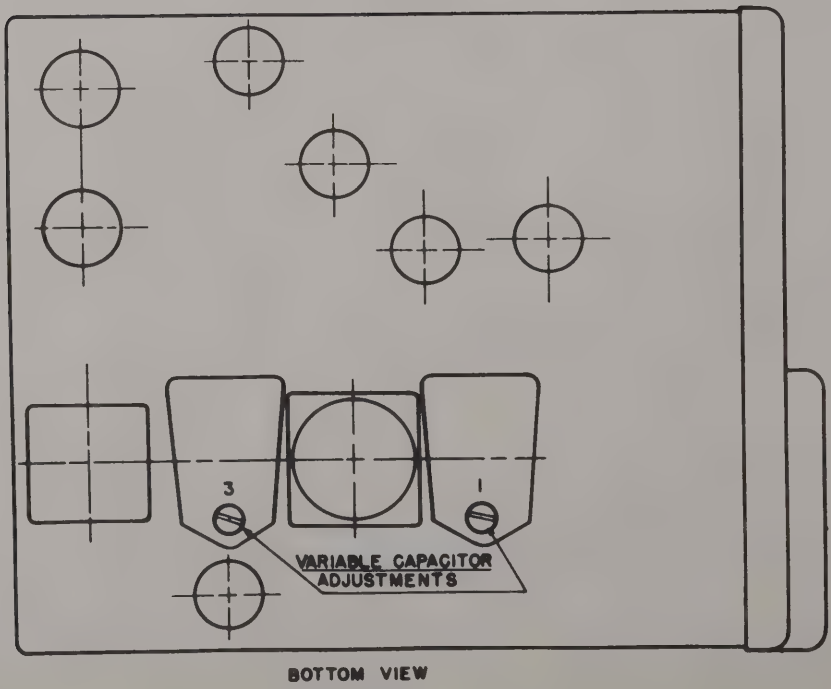

3
1
VARIABLE CAPACITOR ADJUSTMENTS
BOTTOM VIEW

Figure 5-5. Radio Transmitter—Alignment Diagram

(2) REASSEMBLY.

(*a*) Center the four aligning adjustments. (See fig. 5-5.)

(*b*) Turn all capacitors to maximum capacity.

(*c*) Put the assembly into position and replace the three screws.

(*d*) With the capacitor plates set for maximum capacity, tighten the two set screws securing the shaft into the coupling.

(*e*) To reconnect reverse steps (*a*) and (*b*) listed in disassembly.

(*f*) Realign the set. (See par. 8, this sec.)

i. VARIABLE CAPACITORS C-106 OR C-122 (TRANSMITTER).

(1) DISASSEMBLY.

CAUTION

Remove JAN-832A (V-103) to prevent possible damage when removing the capacitor assemblies.

(*a*) Loosen couplings on the shaft connecting the two capacitors. Slide couplings back on shaft and remove.

(*b*) Disconnect and tag all wires that would prevent removal of the capacitor assembly.

(*c*) Loosen the variable capacitor shaft from the coupling on top of the chassis by removing two set screws.

(*d*) Remove the three screws holding the capacitor assembly to the chassis.

(*e*) Turn the motor drive shaft until coupling arm extends out away from the capacitor.

(*f*) Lift the entire assembly off the chassis, but do not force it. It will be necessary to slide capacitor C-106 slightly to the rear of the chassis in order to clear the coupling arm.

(2) REASSEMBLY.

(*a*) Center the four aligning adjustments. (See fig. 5-5.)

(*b*) Turn all capacitors to maximum capacity.

(*c*) Put the assembly into position and replace the three screws.

(*d*) With the capacitor plates set for maximum capacity, tighten the two set screws securing the shaft into the coupling.

(*e*) Place the shaft connecting the two capacitors in position.

(*f*) Turn the couplings until the projections are parallel; tighten the set screws.

(*g*) Replace and resolder all connections that were removed during disassembly.

(*h*) Replace JAN-832A (V-103).

(*i*) Realign the set. (Refer to par. 8, this sec.)

j. VARIABLE CAPACITOR WORM DRIVE GEARS (TRANSMITTER).

CAUTION

Remove JAN-832A (V-103) to prevent possible damage when removing the drive shaft.

(1) DISASSEMBLY.

(*a*) Loosen couplings on shaft connecting the two variable capacitors. Slide couplings back on shaft and remove.

(*b*) Remove two screws holding each drive worm gear bracket. This releases brackets.

(2) REASSEMBLY.

(*a*) Center the four alignment adjustments. (See fig. 5-5.)

(*b*) Set all variable capacitor plates to maximum capacity.

(*c*) Loosen the gear of the variable capacitor on which the worm is to be mounted.

(*d*) Put drive worm into place. Mesh backlash gear, setting the foremost gear one tooth counterclockwise.

(*e*) Replace screws holding drive worm bracket but do not tighten.

(*f*) Align the two brackets by means of a straight edge then tighten the screws.

(*g*) Set the variable capacitor to maximum capacity and tighten the set screws holding the shaft to the coupling.

(*h*) Put the shaft connecting the two capacitors in place.

(*i*) Turn the couplings until the projections are parallel; tighten the set screws.

(*j*) Realign the set. (Refer to par. 8, this sec.)

k. MOTOR DRIVE ASSEMBLY (RECEIVER).

(1) DISASSEMBLY.

(*a*) Disconnect and tag the wires from the terminal board mounted on solenoid relay K-202.

(*b*) Close the armature of the solenoid relay by hand and rotate the tuning shaft so the coupling arm points away from the chassis.

(*c*) Remove the six screws that hold the motor drive to the casting, from the top of the chassis.

(*d*) The entire motor drive assembly may now be lifted free.

(2) REASSEMBLY.—Reverse the disassembly procedure.

l. TUNING ASSEMBLY (RECEIVER).

(1) DISASSEMBLY.

(*a*) Remove the wrap-around side cover.

(*b*) Remove the motor drive as outlined in subparagraph *k* above.

(*c*) Remove the six clamps holding the cable to the bottom of the tuning assembly.

(*d*) Disconnect and tag all wires which would prevent removal of the tuning assembly.

(*e*) Loosen the set screws at both ends of the flexible shaft connecting the tuning assembly to the front panel, and disconnect the coupling from the shaft of the tuning assembly.

(*f*) Remove the 10 screws holding the tuning assembly to the chassis.

(*g*) The tuning assembly may now be removed from the side of the set.

(2) REASSEMBLY.

(*a*) Set the tuning assembly in place and replace the 10 screws holding it to the chassis.

(*b*) Reconnect all disconnected wires and replace the cable clamps.

(*c*) Replace motor.

(*d*) Set the variable capacitors for maximum capacity (plates fully meshed).

(*e*) Set the frequency indicating dial to the "END" mark located between "156" and "100," in the uncalibrated portion.

(*f*) Replace the flexible shaft coupling and tighten the set screws on both ends of the shaft.

(*g*) Realign the receiver. (Refer to par. 9, this section.)

CAUTION

The spacer support used in the B series receiver is made 1/16 inch shorter to compensate for the overlap of the chassis where the two sections are joined. When replacing the tuning assembly make certain the correct length spacer support is used. In an emergency where the shorter spacer support is not available, 1/16 inch can be cut or filed off the length of the longer spacer support. For B series receivers the correct spacer support length is 1-15/64 inches. For A series receivers the correct spacer support length is 1-19/64 inches. (See fig. 5-6.)

m. FRONT PANEL ASSEMBLY (RECEIVER).

(1) DISASSEMBLY.

(*a*) Remove the bracket holding the squelch control on the bottom of the front panel assembly.

(*b*) Disconnect the white and green wire from the oscillator grid.

(*c*) Remove antenna plug receptacle J-201.

(*d*) Loosen the flexible shaft connecting the cam shaft on the front panel to the tuning assembly.

(*e*) Remove the six screws holding front panel to wrap-around side cover and the four screws holding the front panel to the chassis.

(*f*) The front panel assembly may now be lifted off.

(*g*) If the panel is to be completely removed, disconnect and tag all other wires connecting the front panel to the chassis.

(2) REASSEMBLY.

(*a*) Reconnect all wires which were disconnected.

(*b*) Put the assembly in place and replace the ten screws.

(*c*) Replace the oscillator grid wire, antenna socket and squelch control bracket.

(*d*) Set the variable capacitors for maximum capacity (plates fully meshed).

(*e*) Set the frequency indicator dial to the "END" mark located between "156" and "100," in the uncalibrated portion.

(*f*) Replace the flexible shaft coupling and tighten the set screws on both ends of the shaft.

n. HARMONIC SELECTOR SWITCH ASSEMBLY (RECEIVER).

(1) DISASSEMBLY.

(*a*) Remove front panel assembly as outlined in paragraph 3*m* above.

(*b*) Tag and disconnect all wires from the selector switch.

(*c*) Remove the six screws holding the assembly in place and lift out.

(2) REASSEMBLY.

(*a*) Replace the harmonic selector switch assembly and fasten with the six screws.

(*b*) Align all thumbwheels at 140 megacycles.

(*c*) Rotate the cam shaft until all cam switches are in the open positions (spring clips centered in notches).

(*d*) Loosen the set screws holding the frequency indicating dial to the cam shaft.

(*e*) Set the dial to 140 megacycles and tighten set screws.

(*f*) Replace the front panel.

o. CAPACITOR DRIVE GEAR O-204 (RECEIVER).

(1) DISASSEMBLY.

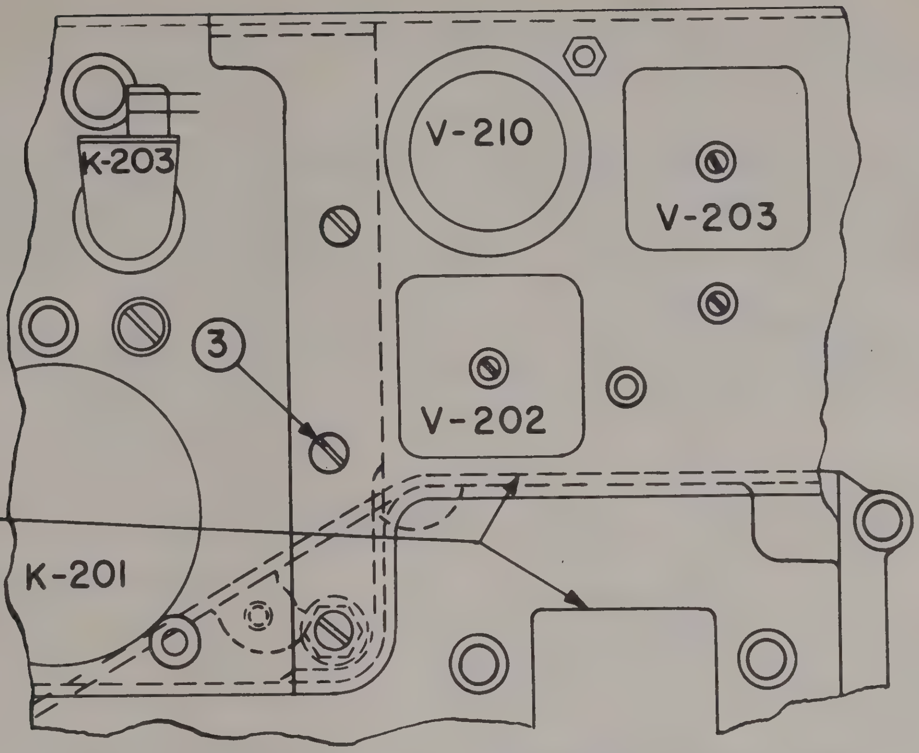
(*a*) Remove the tuning assembly as outlined in paragraph 5*l*, this section.

(*b*) Remove the two screws and four hexagon nuts holding variable capacitors, on the bottom of the casting.

(*c*) Remove the four screws holding the worm gear bracket to the casting and remove the bracket.

(2) REASSEMBLY.

(*a*) Replace the drive worm bracket.


K-203
V-210
V-203
V-202
3
1
K-201

ITEM	NAME
1	CAPACITOR MOUNTING PLATE
2	SPACER SUPPORT
3	CHASSIS JOINT SCREWS (3)

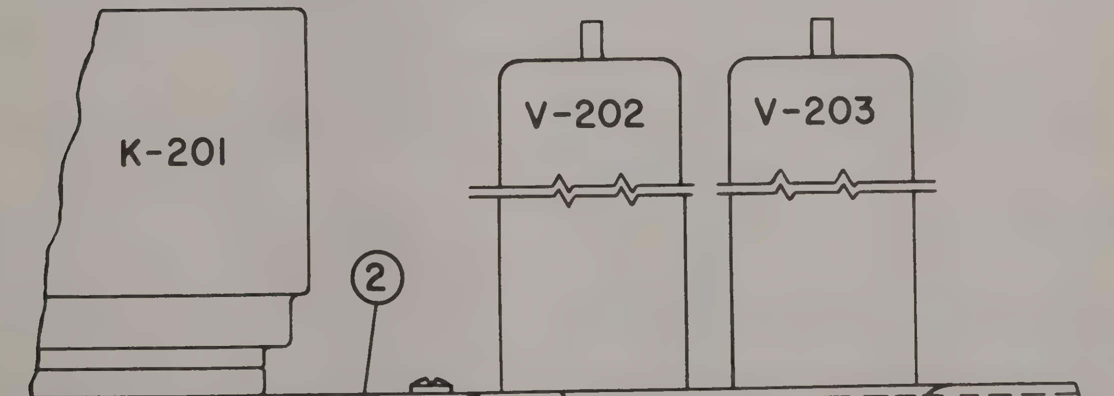

K-201
V-202
V-203
2

Figure 5-6. Radio Receiver R-77A/ARC-3 or R-428A/ARC-36, B Series—Split Chassis Joint

(*b*) Put the capacitors in place, meshing the backlash gears with the worm drives. Set the foremost gear two teeth counterclockwise. Replace the screws and nuts holding the variable capacitors to the casting.

(*c*) Loosen set screws on gears and set both capacitors to maximum capacity (plates fully meshed).

(*d*) Replace tuning assembly as outlined in para. 5*l*(2), this section.

(*e*) Realign the receiver. (Refer to par. 9, this section.)

p. IF AND AF ASSEMBLY (RECEIVER).

(1) DISASSEMBLY.

(*a*) Remove the wrap-around side cover (case center section).

(*b*) Remove the motor drive assembly as outlined in subparagraph 5*k*, this section.

(*c*) Disconnect and tag all wires that would prevent removal of the IF and AF assembly.

(*d*) Remove the three screws that hold the tuning assembly to the bottom of the IF and AF assembly.

(*e*) Remove the three screws from the top of the chassis that hold the IF and AF assembly to the oscillator and motor control assembly. (See fig. 5-6.)

(*f*) The IF and AF assembly can now be removed.

(2) REASSEMBLY.—Reverse the disassembly procedure.

q. OSCILLATOR AND MOTOR CONTROL ASSEMBLY (RECEIVER).

(1) DISASSEMBLY.

(*a*) Remove the wrap-around side cover (case center section).

(*b*) Remove the front panel assembly as outlined in paragraph 5*m*, this section.

(*c*) Disconnect and tag all wires that would prevent removal of the oscillator and motor control assembly.

(*d*) Remove the two screws that hold the oscillator and motor control assembly to the tuning assembly.

(*e*) Remove the three screws from the top of the chassis that hold the IF and AF assembly to the oscillator and motor control assembly. (See fig. 5-6.)

(*f*) The oscillator and motor control assembly can now be removed.

(2) REASSEMBLY.—Reverse the disassembly procedure.

r. R.F. TUBE SOCKET (RECEIVER).

(1) DISASSEMBLY (See Fig. 5-7).

(*a*) Remove the two screws (Item 1) that fasten the tube shield base to the two mounting plates.

(*b*) Remove the tube shield base (Item 2).

(*c*) Remove the screws that fasten the large mounting plate (Item 3) to the tuning assembly.

(*d*) Remove the large mounting plate.

(*e*) Disconnect and tag all wires which would prevent removal of the tube socket (Item 4).

(*f*) Disconnect center eyelet of the tube socket from the tuning assembly.

(*g*) Lift tube socket from the top of the tuning assembly. Retain the small tapped mounting plate (Item 5) to reuse on the new tube socket.

(2) REASSEMBLY.—Reverse the disassembly procedure after first making certain the small tapped mounting plate is in place.

s. CRYSTAL PANEL ASSEMBLY (AN/ARC-49 RADIO TRANSMITTER).

(1) DISASSEMBLY.

(*a*) Remove top cover.

(*b*) Remove bottom cover.

(*c*) Remove upper dust shield by removing four screws.

(*d*) Unsolder the following:

1. Green tracer lead from Pin 6 of V-101 and tag.

2. Black tracer lead from Pin 7 of V-101 and tag.

(*e*) Remove two screws which are used to hold the Switch, S-103, mounting plate and the rear dust shield.

(*f*) Remove cable clamp and remaining screw which holds rear dust shield in place and lift rear dust shield out.

(*g*) Remove two screws which hold the assembly to the right hand bracket. One screw is inside near the bottom of the crystal panel assembly.

(*h*) Remove two screws which hold the crystal panel assembly to left hand bracket.

(*i*) Remove three screws which hold the left hand bracket to chassis. Lift this bracket out.

Note

One screw requires a 90° screw driver.

(*j*) Unsolder and tag two leads which connect to relays K-204 and K-205.

(*k*) Unsolder and tag nine leads which connect to Plug U-15/U.

(*l*) Lift the assembly out.

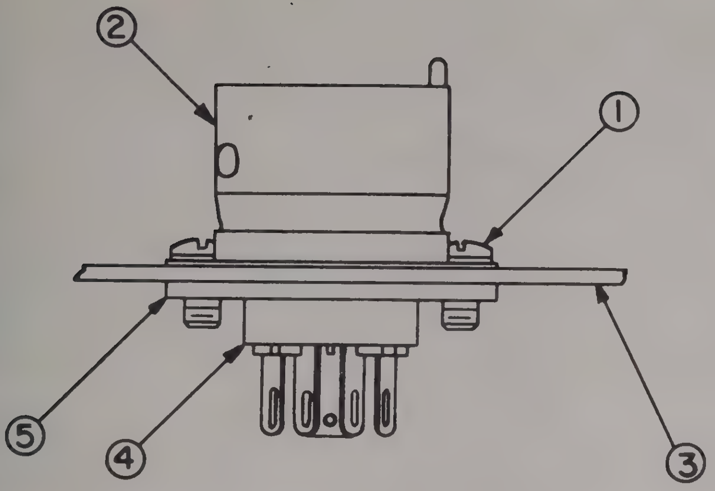
(2) REASSEMBLY.—Reverse the disassembly procedure.

t. MOTOR DRIVE UNITS FOR AN/ARC-49 RADIO TRANSMITTER SWITCH ASSEMBLIES S-104 and S-105.

(1) DISASSEMBLY.

(*a*) Remove crystal panel assembly as outlined in paragraph *s* above.

(*b*) Remove four flat head screws that hold the switch mounting bracket to crystal panel mounting bracket.



ITEM	NAME
1	SCREW & WASHER
2	SHIELD BASE
3	MOUNTING PLATE
4	TUBE SOCKET
5	MOUNTING PLATE

Figure 5-7. Radio Receiver R-77A/ARC-3 or R-428A/ARC-36, B Series—RF Miniature Tube Socket Mounting

(*c*) Remove eight screws which mount switches to switch mounting bracket.

(*d*) Lift switch mounting bracket out.

(*e*) Unsolder capacitor lead from Wafer No. 1 and tag.

(*f*) Unsolder and tag motor coil lead from Wafer No. 2.

(*g*) Unsolder the four control wires from Pins 2, 3, 4 and 5 of Wafer No. 1 and tag.

(*h*) Remove the two nuts which hold the remaining wafers onto the motor drive unit.

(*i*) Gently pull the motor drive unit out. Be careful to collect all the spacers and tag each one. Note the orientation of the rotor on Wafer No. 2 and write it down.

WARNING

Orientation of the rotors, old and new is important. Failure to heed this will result in 180° misalignment.

(2) REASSEMBLY.

(*a*) Orient the rotor on Wafer No. 1 to *exactly* the same relationships as in (1)(*i*) above.

(*b*) Gently insert the new drive unit in the lead assembly making sure that all spacers are correctly located.

(*c*) Reverse the disassembly procedure in (1)(*a*) through (1)(*b*) above.

WARNING

Do not disturb wire dressing any more than necessary. Spread leads apart as much as possible.

u. CRYSTAL SELECTOR SWITCH ASSEMBLY (AN/ARC-49 RADIO RECEIVER).

(1) DISASSEMBLY.

(*a*) Remove front panel assembly as outlined in paragraph 5*m*.

(*b*) Remove 10 flat head screws on top of front panel. This loosens the two capacitors and the switch mounting brackets.

(*c*) Remove four screws which are located in front of panel to loosen the crystal mounting panel. The crystal selector switches and associated wiring can be lifted out of the front panel enough to facilitate removal of motor drive units for S-205 and S-206.

(2) REASSEMBLY.—Reverse the disassembly procedure.

v. MOTOR DRIVE UNITS FOR AN/ARC-49 RADIO RECEIVER SWITCH ASSEMBLIES S-205 and S-206.

(1) DISASSEMBLY.

(*a*) Remove crystal ~~selector~~ switch assembly as outlined in paragraph *u* above.

(*b*) Remove motor drive unit in accordance with paragraph *t*(1)(*e*) through *t*(1)(*i*).

(2) REASSEMBLY.—Reverse the disassembly procedure.

6. CHECKING CRYSTAL UNITS.

The activity of questionable crystal units may be checked by the procedure outlined below.

a. A transmitter known to be in good operating condition must be used together with Test Unit TS-178/ARM-1.

b. Insert a good crystal in any channel, then turn the equipment on by selecting that channel on the control box. If using a control panel it is necessary to set the "ON-OFF" switch to the "ON" position and set the channel selector switch or switches to the desired channel.

c. Connect Test Unit TS-178/ARM-1 to the receptacle marked "PL-152" on the front panel of the transmitter then rotate the test unit selector switch to the "OSC." position.

d. Replace the good crystal unit with the questionable unit; then press the microphone press-to-talk switch.

e. A reading of 15 or better for the AN/ARC-3 or AN/ARC-36 equipment and a reading of 20 or better for the AN/ARC-49 equipment on the test unit meter is a satisfactory indication of a good crystal unit.

f. When all tests have been completed, disconnect the test equipment and replace the receptacle cover.

7. LUBRICATION.

a. GENERAL.—Although relatively few parts require lubrication on this equipment, it is absolutely necessary that these receive proper attention. Except where otherwise indicated, check the following points every 100 hours and lubricate every 1,000 hours.

b. POINTS OF LUBRICATION.

(1) Motor shaft worm drive gear.

(2) Drive shaft coupling arms.

(3) Variable capacitor worm drive gears.

(4) Selector switch worm drive gears.

(5) Transmitter dynamotor, every 200 hours.

(6) Receiver dynamotor, every 500 hours.

(7) Rotary solenoid switches on AN/ARC-49 equipment. Sparingly grease all metal rubbing parts.

Note

Use grease AN-G-25 for points (1), (2), (3) and (4) and lubricant AN-G-15 for points (5), (6) and (7).

(8) Place a very small quantity of lubricant on the snap-slide assemblies occasionally.

CAUTION

Do not over-lubricate, as excessive lubrication may cause serious trouble. Periodically the tuning motor should be removed and the bearings examined for proper lubrication, and if necessary pack with AN-G-25 grease. Do not lubricate relay contacts.

8. ALIGNMENT OF TRANSMITTER.

Note

Because of the variations in the input and output capacitances of JAN-832A (V-103 and V-104), it is sometimes necessary to realign the transmitter after replacing either or both of these tubes. See the inside of the transmitter cover for instructions.

a. EQUIPMENT REQUIRED.—The only equipment required for aligning the transmitter is Radio Test Set AN/ARM-1 and Phantom Transmitter Antenna TS-78/U.

b. PROCEDURE.

(1) Connect the test unit to a 28 volt DC supply, making sure the "OFF" button on the control box is depressed or that the "ON-OFF" switch is "OFF" if using a control panel. Remove the top cover and the small cover in the base plate of the transmitter. Connect plug U-15/U (16 pin) of the test set into the transmitter receptacle marked "U-15/U."

(2) Install Phantom Transmitter Antenna TS-78/U in the transmitter receptacle marked "ANTENNA."

(3) Remove the red cover on the receptacle marked "PL-152" and connect Test Unit TS-178/ARM-1.

(4) For the AN/ARC-3 or AN/ARC-36 Radio Transmitter insert the 100-megacycle (5555.55KC), 125-megacycle (6944.44KC), and the 152-megacycle (8458.823KC) crystals in channels "A", "F", and "G" respectively. For the AN/ARC-49 Radio Transmitter insert crystals of the same frequency as above in channels "D-10," "D-11" and "D-12" respectively.

(5) Select channel "G" on the AN/ARC-3 or AN/ARC-36 Radio Transmitter and channel "D-12" on the AN/ARC-49 Radio Transmitter. If using a control panel set the "ON-OFF" switch to the "ON" position. Push motor control switch S-102 and hold down until the 152 megacycle mark on the dial is approached. Release switch S-102, select any other channel and immediately reselect the original channel. Then manually tune exactly to the 152 megacycle mark on the dial by turning the knurled knob on the motor shaft.

Note

Allow the transmitter to warm up for a period of 5 minutes before proceeding with (6)

(6) Turn the switch on the test unit to the "OSC" position. The meter should read between 20 and 70.

(7) Turn to position "1" on test unit (1st har. generator) and with Alignment Tool MX-174/ARM-1 adjust the green screw marked "1" (located on the variable capacitor under the chassis nearest the front), for *maximum* reading on the meter (25 to 90). (See fig. 5-5.)

(8) Turn to Position "2" on test unit (2nd har. generator) adjust green screw marked "2" (located on variable capacitor on top of chassis nearest the front), for *maximum* reading on the meter (25 to 90). Take care to adjust the screw so that the meter will read the maximum *with the screwdriver removed* as metallic parts of the screw driver affect tuning accuracy.

(9) Turn to position "3" on test unit (power amplifier grid), adjust green screw marked "3" (located on variable capacitor under the chassis nearest the back), for *maximum* reading on the meter.

(10) Turn to position "4 trans." on test unit, adjust green screw marked "4T" (located on top rear variable condenser) for *minimum* reading on the meter. Take care to adjust the screw so that the meter will read the minimum *with the screwdriver* removed. Maximum brilliancy of the lamps in the phantom antenna should occur simultaneously with this minimum reading.

(11) Select channel "A" (100 megacycles) on the AN/ARC-3 or AN/ARC-36 Radio Transmitter and channel "D-10" on the AN/ARC-49 Radio Transmitter. Depress the motor control switch S-102 and hold it down until the 100 megacycle mark on the dial is approached. Release switch S-102, select any other channel and immediately reselect the original channel. Then manually tune exactly to the 100 megacycle mark on the dial by turning the knurled knob on the motor shaft.

(12) Turn to position "1" on test unit (1st har. generator), loosen the screw marked "OSC LOCK" and adjust the oscillator plate coil iron core by turning the core screw until a *maximum* reading is obtained on the test meter.

(13) Repeat step (5) [manual tuning to 152 megacycles].

(14) With the test unit in position "1" adjust the green screw marked "1" for *maximum* reading on the meter.

(15) Repeat steps (11) to (14) inclusive until the *maximum* adjustment of either the oscillator coil core or the green screw marked "1" does not affect the *maximum* adjustment of the other.

(16) Repeat step (5) [manual tuning to 152 megacycles].

(17) Unscrew cap H-101 on control tube potentiometer R-124 and turn the potentiometer adjusting screw to the extreme counterclockwise position.

(18) With the test unit in position "3" (power amp. grid), slowly tune the transmitter manually toward the low frequency end of dial. Set tuning so that the meter on the test unit reads 10.

(19) Manually open S-101B for an instant, then slowly turn the potentiometer adjusting screw clockwise until tuning control relay K-103 releases and the transmitter dynamotor stops.

(20) To check adjustment, select any other channel and immediately reselect the previous channel. Manually tune the transmitter toward the low frequency end of the dial until there is no indication of grid current on position 3 of the test unit. Then manually open S-101B on the front variable capacitor and immediately let it close; then slowly tune the transmitter manually toward 152 megacycles while watching the test meter. Observe the meter reading at the point where control relay K-103 releases and the transmitter dynamotor stops. If adjustment is correct, the meter should read between 8 and 12 at the point of release.

(21) Select channel "G" on the AN/ARC-3 or AN/ARC-36 Radio Transmitter and channel "D-12" on the AN/ARC-49 Radio Transmitter. Push motor control switch S-102 and hold down until motor stops. The transmitter should now be set up at 152 megacycles, as indicated by dial calibration.

(22) Turn to position "4 trans." on test unit. Remove phantom antenna and adjust green screw marked "4T" (on top rear variable capacitor), for *minimum* reading on meter *when the screwdriver is removed.*

(23) Replace phantom antenna and select channel "A" on the AN/ARC-3 or AN/ARC-36 Radio Transmitter and channel "D-10" on the AN/ARC-49 Radio Transmitter. Push the motor control switch S-102 and hold down until motor stops. The transmitter should now be set up at 100 megacycles, as indicated by dial calibration.

(24) Turn to position "4 trans." on test unit. Remove phantom antenna and check tracking by slowly inserting each end of Tuning Wand MX-173/ARM-1 into coil L-109 (coil connected to variable capacitor on top of chassis nearest the back.) (See fig. 6-12.) If the variation toward *minimum,* (as indicated by the meter) is greater than four divisions with the brass end of the wand inserted, further adjustment of the potentiometer is necessary. Make this adjustment as follows:

(*a*) Replace the phantom antenna.

(*b*) Select channel "G" on the AN/ARC-3 or AN/ARC-36 Radio Transmitter and channel "D-12" on the AN/ARC-49 Radio Transmitter. Then push down motor control switch S-102 and hold until motor stops.

(*c*) Turn the control tube potentiometer adjusting screw to extreme counterclockwise position.

(*d*) Select any other channel, immediately reselect the previous channel, and manually open switch S-101B for an instant.

(*e*) Turn to position "1" on test unit (first har. generator), and manually tune for *maximum* reading on the test meter.

(*f*) Turn to position "3" on the test unit (power amp. grid) and manually tune the transmitter toward the low frequency end of the dial.

(*g*) Set the tuning so that the meter on the test unit reads 20.

(*h*) Slowly turn the potentiometer adjusting screw clockwise until relay K-103 releases.

(*i*) Repeat steps (21) to (24) inclusive to check the tracking at 100 megacycles. If the variation toward minimum, as indicated by the meter, is still greater than four divisions with the brass end of the tuning wand inserted into coil L-109, repeat steps (*a*) through (*i*), setting the release point of relay K-103 at 30 instead of 20.

IMPORTANT

Maximum grid drive to the final amplifier, as indicated with the test unit set in position "3," must be greater than two times the reading obtained at the setting of the control tube

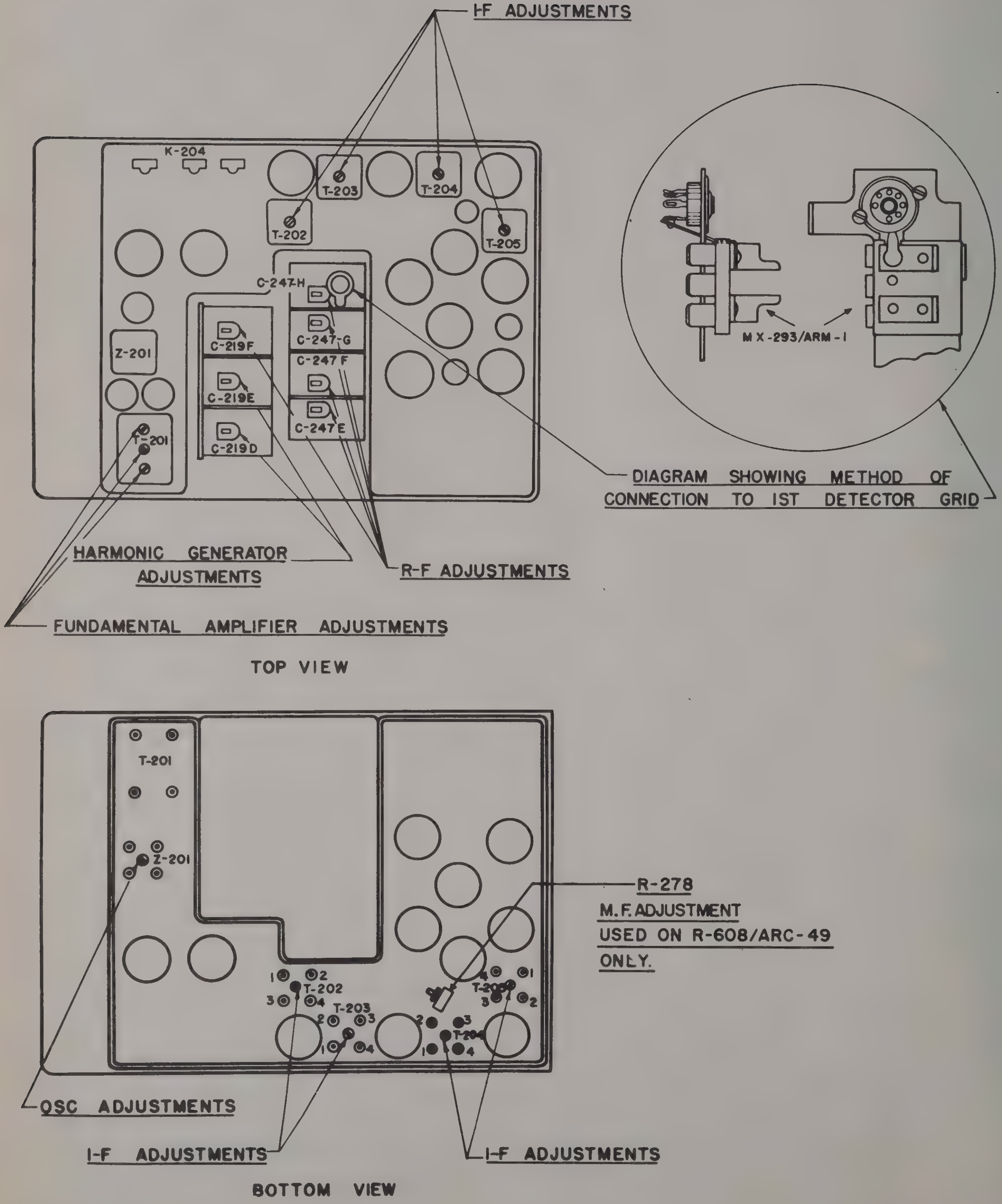

I-F ADJUSTMENTS
K-204
T-203
T-204
T-202
T-205
C-247-H
C-247-G
C-247 F
C-247 E
C-219F
C-219E
C-219D
Z-201
T-201
M X-293/ARM-1
DIAGRAM SHOWING METHOD OF CONNECTION TO 1ST DETECTOR GRID
HARMONIC GENERATOR ADJUSTMENTS
R-F ADJUSTMENTS
FUNDAMENTAL AMPLIFIER ADJUSTMENTS
TOP VIEW
T-201
Z-201
R-278
M.F. ADJUSTMENT
USED ON R-608/ARC-49
ONLY.
1
2
T-202
3
4
T-203
2
3
1
4
4
1
T-205
3
2
2
3
T-204
1
4
OSC ADJUSTMENTS
I-F ADJUSTMENTS
I-F ADJUSTMENTS
BOTTOM VIEW

Figure 5-8. Radio Receiver—Alignment Diagram

potentiometer. Therefore, if it becomes necessary to adjust the potentiometer to 20 or 30, maximum grid drive to the final amplifier must be greater than 40 or 60. If it is not, the potentiometer setting must be decreased accordingly.

(25) Select channel "F" on the AN/ARC-3 or AN/ARC-36 Radio Transmitter and channel "D-11" on the AN/ARC-49 Radio Transmitter. The transmitter should now be set up at 125 megacycles, as indicated by dial calibration.

(26) Adjust trimmer capacitor C-130 for *maximum* brilliancy as indicated by the lamps of the phantom antenna.

(27) Loosen the locking nut on the antenna load adjustment.

(28) Turn the test unit to "4 TRANS." position and set the antenna load adjustment for *maximum* load as indicated by *maximum* reading on the test meter.

(29) Back off coupling two divisions on meter or to a reading of 75, whichever is lower.

(30) Tighten locking nut on the antenna load adjustment.

(31) The transmitter should now be properly aligned.

9. ALIGNMENT OF RECEIVER.

a. EQUIPMENT REQUIRED.

(1) Signal Generator I-96-A or Ferris 18-C (together with an accurate frequency meter).

(2) Radio Test Set AN/ARM-1.

(3) Output meter, 0-20 volts.

b. IF ALIGNMENT.

(1) Connect the test set to a 28 volt DC supply, making sure the "OFF" button on the control box is depressed or the "ON-OFF" switch on the control panel is "OFF."

(2) Remove the top and bottom covers of the receiver, then connect plug PL-153-A of the test set into the receiver receptacle marked "PL-153-A."

(3) Connect the output meter into the "TEL" jack on the control box or to the "LO" terminal on the output transformer and to ground.

(4) Clamp Adapter MX-293/ARM-1 onto the bracket of the four-gang tuning capacitor so that the projection on the adapter extends through the U-shaped hole adjacent to the first detector JAN-9001 (V-209), and contacts the grid pin on the tube. (See fig. 5-8.)

(5) Connect the IF test cord to the Signal Generator I-96-A socket marked "HIGH" and connect the output terminals to Adapter MX-293/ARM-1, being sure the polarity is correct.

(6) Turn on and adjust the signal generator to a frequency of 12 megacycles and select any channel. Allow 5 minutes for the receiver to warm up.

Note

If a 12-megacycle crystal-controlled signal generator is not available, use Frequency Meter Set SCR-211 to adjust the signal generator frequency accurately to 12 megacycles.

(7) Adjust the signal generator output to the smallest value that will give a reading on the output meter. If no output is obtainable, turn all eight IF transformer adjusting screws to the maximum counterclockwise position. Then roughly align each stage, feeding the input into the grids of the third, second, and first IF tubes successively. (See fig. 5-8.)

(8) With the 12-megacycle input signal fed to the first detector grid JAN-9001 (V-209), adjust the screw on the top of the fourth IF transformer T-205 for the *maximum* reading on the output meter. (See fig. 5-8.)

(9) Adjust the screw at the bottom of IF transformer T-205 for the *maximum* reading on the output meter. Continue to reduce the input from the signal generator to the smallest value that will give a workable reading on the output meter. Because of the AVC action, alignment cannot be performed with high input.

(10) Connect Shunting Unit MX-294/ARM-1 across terminals one and two (toward the front of the chassis) on the third IF transformer T-204. Adjust the screw on top of the transformer for *maximum* reading on the output meter.

(11) Remove the shunting unit from terminals "1" and "2," then connect it across terminals three and four (toward the rear of the chassis) on the third IF transformer T-204. Adjust the screw on the bottom of the transformer for *maximum* reading on the output meter.

(12) Repeat the procedure outlined in (10) and (11) above for the second IF transformer T-203.

(13) Remove the shunting unit from transformer T-203 and connect it across terminals one and two (toward the inside of the chassis) on the first IF transformer T-202. Adjust the screw on top of the transformer for *maximum* reading on the output meter.

(14) Remove the shunting unit from terminals one and two, then connect it across terminals three and four (toward the outside of the chassis) on the first IF transformer T-202. Adjust the screw on the bottom of the transformer for *maximum* reading on the output meter.

(15) Remove the shunting unit and adapter from the IF transformer and variable capacitor, respectively.

c. CRYSTAL OSCILLATOR ALIGNMENT.

(1) Connect Test Unit TS-178/ARM-1 into the receptacle marked "PL-152" located inside the receiver. Remove the adapter from the variable capacitor bracket.

(2) Turn the adjusting screw on the bottom of oscillator coil Z-201 as far counterclockwise as possible. (See fig. 5-8.)

(3) Insert the 8727.00-kilocycle crystal unit in channel "A" for the AN/ARC-3 or AN/ARC-36 Radio Receiver and in channel "D-12" for the AN/ARC-49 Radio

Receiver. Select this channel. (If using a control panel it is necessary to set the "ON-OFF" switch to the "ON" position.)

(4) Turn the test unit to the "OSC" position. Turn the oscillator coil adjusting screw clockwise until the meter on the test unit reads 50.

d. FUNDAMENTAL AMPLIFIER ALIGNMENT.

(1) Turn all three adjusting screws on top of the fundamental amplifier transformer T-201 to the maximum counterclockwise position. (See fig. 5-8.)

(2) For the AN/ARC-3 or AN/ARC-36 Radio Receiver insert the 8000.00, 8100.00, 8727.00, and 8453.-823 kilocycle crystal units in channels "A," "B," "C" and "D" respectively, and select channel "B." (If using a control panel it is necessary to set the "ON-OFF" switch to the "ON" position.)

For the AN/ARC-49 Radio Receiver insert the 8000.00, 8100.00, 8727.00, and 8458.823 kilocycle crystal units in channels "A-1," "B-1," "C-1" and "D-1" respectively. Set the "ON-OFF" switch on the control, radio set to "ON" and select channel "B-1."

(3) Turn the test unit to position "1."

(4) Turn first one and then the other of the two outside adjusting screws two or three turns in a clockwise direction. Repeat these operations consecutively until the maximum meter reading is obtained.

(5) Turn the center adjusting screw clockwise until the maximum meter reading is obtained. The test meter should now read between 65 and 90.

(6) Check the test unit meter reading on channels "A," "B," "C" and "D" for the AN/ARC-3 or AN/ARC-36 Radio Receiver and on channels "A-1," "B-1," "C-1" and "D-1" for the AN/ARC-49 Radio Receiver. The meter should read not less than 40 on any channel. If the reading is less than 40, repeat the fundamental amplifier alignment procedure.

e. HARMONIC GENERATOR ALIGNMENT.

(1) Remove all crystals.

(2) Select channel "A" on the AN/ARC-3 or AN/ARC-36 Radio Receiver, or channel "D-12" on the AN/ARC-49 Radio Receiver. (If using a control panel it is necessary to set the "ON-OFF" switch to the "ON" position.)

(3) Push down motor control switch S-203 and hold until the motor stops.

(4) Insert an 8000.00 kilocycle crystal unit in the channel selected in (2) and set the applicable thumbwheel at "156."

(5) For the AN/ARC-3 or AN/ARC-36 Radio Receiver manually depress the armature of relay K-204. Note that it locks itself down and that relay K-203 and K-205 on each side of K-204 also close.

For the AN/ARC-49 Radio Receiver manually open relay K-204 by pulling the armature away from the pole piece. Note that relays K-203 and K-205 on each side of relay K-204 close.

(6) For the AN/ARC-3 or AN/ARC-36 Radio Receiver turn the knurled knob on top of the tuning system motor in a clockwise direction until the dial is set at "156." Then manually open relay K-204 by pulling the armature away from the pole piece. Note that as relay K-204 is opened, relay K-205 relaxes. Relay K-203 may or may not relax at this time depending upon the amount of bias the control tube receives from V-206 grid circuit.

For the AN/ARC-49 Radio Receiver turn the knurled knob on top of the tuning system motor in a clockwise direction until the dial is set at "156". Then manually depress the armature of relay K-204. Note that as relay K-204 energizes, relay K-205 relaxes. Relay K-203 may or may not relax at this time, depending upon the amount of bias the control tube receives from V-206 grid circuit.

(7) Turn the test meter to position "3," then adjust trimmer capacitors C-219D and C-219E for maximum reading on the meter. Use the insulated screwdriver provided with Radio Test Set AN/ARM-1 to prevent incorrect readings.

Note

If trouble is encountered in selecting the proper oscillator harmonic, connect a signal generator tuned to 156 mc to the input of the receiver and select the oscillator harmonic which gives the maximum output from the receiver.

(8) Remove the test unit connection from the set.

f. RF ALIGNMENT.—For the following operation an 8000.00 kilocycle crystal unit must be inserted in channel "A" for the AN/ARC-3 or AN/ARC-36 Radio Receiver and in channel "D-12" for the AN/ARC-49 Radio Receiver. The applicable thumbwheel is set at "156." (If using a control panel the "ON-OFF" switch is set to the "ON" position.)

(1) Select another channel and immediately reselect the channel specified in the above paragraph. Screw Cap Mx-506/ARM-1 over the motor control button S-203 so that the button is locked down. The motor will stop just below the 156-megacycle mark on the frequency dial.

(2) Connect an output meter to the headset jack.

(3) Connect the Signal Generator I-96-A RF output to the antenna receptacle marked "PL-259" on the receiver. To make this connection use Plug PL-272 as an adapter. Tune the signal generator to 156 megacycles for the maximum reading on the output meter.

(4) Adjust trimmer capacitors C-247E, C-247F, C-247G, C-247H, and C-219F (see fig. 5-8) for the maximum reading on the output meter. Repeat adjustments until no further improvement can be obtained.

(5) For the AN/ARC-3 or AN/ARC-36 Radio Receiver set the channel "A" thumbwheel to 100 mega-

cycles. The applicable thumbwheel for channel "D-12" on the AN/ARC-49 Radio Receiver is also set to 100 megacycles. Select another channel and immediately reselect the channel specified above. Push motor control switch S-201 and see that the frequency dial stops at 100 megacycles.

(6) If satisfactory results are not obtained, repeat adjustments (3) and (4) above.

(7) Remove test equipment connections from the receiver, then insert crystal units and set up the frequencies for the various channels.

SECTION VI
SUPPLEMENTARY DATA

1. MODIFICATIONS OF RADIO SET AN/ARC-3 OR AN/ARC-36.

Modification Symbol	*Description of Modification and Reason for Change*
	RADIO TRANSMITTER T-67/ARC-3 OR T-312/ARC-36
None	C-150 and C-151 were removed to provide a minimum capacity more suitable for 832A type tubes.
None	R-139, R-136, and R-149 values were changed to improve the centering of sidetone voltage between limits.
None	Wiring to relay K-104 was changed to prevent an A+ short in the event the relay was improperly adjusted.
M-1	The values of R-104 and R-105 and the point of connection to B+ were changed to improve the carrier noise level.
M-2	The value of C-107 was changed to facilitate procurement.
M-3	The tuning system was rewired to prevent continuous running of the tuning motor in the event of failure of the B+ fuse or control tube V-105. Later in production the K-117 connection to the grid of control tube V-105 was moved to the junction of R-121, R-134 and C-120 to improve performance of the sensitive relay K-103.
None	R-138 tolerance was reduced to improve operation of sidetone circuits.
Production change converting Radio Transmitter T-67/ARC-3 to T-67A/ARC-3 or T-312/ARC-36 to T-312A/ARC-36	Incorporates all of the above modifications plus redesign and rewiring of switch S-101B to insure proper starting of the tuning system for every position of cam O-101.
None	R-136 and R-139 values were changed to improve the centering of sidetone voltage between limits.
Production change converting T-67A/ARC-3 to T-67B/ARC-3 or T-312A/ARC-36 to T-312B/ARC-36	Resistors R-151, R-152 and R-153, and switch S-103 were added to permit modulation of the transmitter from an intercommunication set. The new input was designed for use primarily with intercommunication set AN/AIC-10 but may be used with any intercom system with an output of 4 to 6 volts at 150 ohms. Switches S-101A and S-101B were rewired to prevent possible modulation of the transmitter when the tuning system has stopped at the high frequency end of the cam.
None	JAN-6L6GA tubes, V-107 and V-108, were changed to JAN-6L6WGB tubes to provide an improved tube type and their clamps and chassis marking were correspondingly changed.
None	R-153 was changed from 100 ohms to 150 ohms and R-151 was deleted to comply with the change in limits of Intercommunication Set AN/AIC-10.
	RADIO RECEIVER R-77/ARC-3 OR R-428/ARC-36
Production change converting Radio Receivers R-77/ARC-3 to R-77A/ARC-3 or R-428/ARC-36 to R-428A/ARC-36	Jack J-202 and cable W-204 were added to permit injection of a 12-megacycle signal from the guard channel converter.

1. MODIFICATIONS OF RADIO SET AN/ARC-3 OR AN/ARC-36 (Continued)

Modification Symbol	*Description of Modification and Reason for Change*
M-1	C-229 and C-255 were removed, C-248 was changed, and C-302 was added to facilitate procurement.
M-2	The tuning system was rewired to prevent continuous running of the tuning motor in the event of failure of the B+ fuse or control tube V-207.
Production change converting Radio Receiver R-77A/ARC-3 or R-428A/ARC-36 from A series to B series	The chassis was split in two sections to facilitate production.
Production change converting R-77A/ARC-3 to R-77B/ARC-3 or R-428A/ARC-36 to R-428B/ARC-36	Incorporates all of the above modifications, except the split chassis modification, plus changing all JAN-6AK5 tubes to the ruggedized type JAN-6AK5W tube.
None	R-262, R-263, R-267 and R-270 values were changed and R-293 was added to improve performance of the squelch, AVC and Audio Circuits.
None	All JAN-6AK5W tubes were changed to JAN-5654/6AK5W tubes to provide an improved tube type. All types are electrically and mechanically interchangeable.
None	R-284 was changed from 8.2K ohms to 5.6K ohms to reduce distortion and to improve IF fidelity.
	POWER JUNCTION BOX J-68/ARC-3
None	R-401 and R-402 were changed to eliminate resistor burn-out in case of relay contact failure.
M-1	Routing of B+ wires was changed to reduce radiated noise.
M-2	B+ source for P-403 was changed to prevent the B+ current drawn by the guard channel converter from operating the time-delay circuit.
Production change converting Power Junction Box J-68/ARC-3 to J-68A/ARC-3	The fuse holders were changed from the open clip type to the panel mount type to prevent the accumulation of moisture at fuse holders E-401 and E-402 from causing a short circuit to ground.
None	Open type relays K-401 and K-402 were replaced by hermetically sealed relays to provide an improved type relay.
	CONTROL BOX C-118/ARC-3
Modification converting Control Boxes C-118/ARC-3 to C-118A/ARC-3	To prevent continuous running of the transmitter and receiver tuning motors, S-501 was changed to a type of switch which would cause A+ to be broken in case all the push buttons were up.
	CONTROL PANEL C-404/A
Production change converting Control Panel C-404/A to C-404A/A	An edge-lighted lucite panel, two lamps, and one cable wire (250) were added to facilitate operation in darkened locations. A rear cover plate was added to the rotary selector switch to prevent breakage.
	MODIFICATION KIT MX-1131/ARC
Production change converting Modification Kit MX-1131/ARC to MX-1131A/ARC	Relays K-1000 thru K-1007 were deleted and four new relays K-1000 thru K-1003 were added to reduce capacitance and to reduce power dissipation.

2. TUBE COMPLEMENT AND BASE CONNECTIONS.

a. RADIO TRANSMITTER.—All tubes required for operation of the transmitter are listed in the following table:

Note On late production of Radio Transmitter T-67B/ARC-3 and T-312B/ARC-36, V-107 and V-108 were changed from JAN-6L6GA to JAN-6L6WGB. Radio Transmitter T-452/ARC-49 employs JAN-6L6WGB tubes.

TABLE 6-1. TRANSMITTER TUBE COMPLEMENT

Ref. Symbol	*Stock No.*	*JAN Type No.*	*VT Type No.*	*Function*
V-101	2J6V6GT	JAN-6V6GT or	VT-107A	Oscillator
	2J6V6	JAN-6V6	VT-107	
V-102	2J6V6GT	JAN-6V6GT or	VT-107A	First harmonic amplifier
	2J6V6	JAN-6V6	VT-107	
V-103	2J832A	JAN-832A	VT-286	Second harmonic amplifier
V-104	2J832A	JAN-832A	VT-286	Power amplifier
V-105	2J12SH7GT	JAN-12SH7GT or	VT-288A	Tuning control
	2J12SH7	JAN-12SH7	VT-288	
V-106	2J6J5GT	JAN-6J5GT or	VT-94D	Speech amplifier and tone
	2J6J5	JAN-6J5	VT-94	Oscillator
V-107	2J6L6GA	JAN-6L6GA	——	Modulator
V-108	2J6L6GA	JAN-6L6GA	——	Modulator
V-109	2J6V6GT	JAN-6V6GT	VT-107A	Sidetone amplifier
	2J6V6	JAN-6V6	VT-107	

b. RADIO RECEIVER.—All tubes required for operation of the receiver are listed in table 6-2.

Note On Radio Receiver R-77B/ARC-3 or R-428B/ARC-36 all JAN-6AK5 tubes were changed to JAN-6AK5W. A later production change converted the JAN-6AK5W tubes to JAN-5654/6AK5W tubes. Radio Receiver R-608/ARC-49 employs JAN-5654/6AK5W tubes. All types are electrically and mechanically interchangeable.

TABLE 6-2. RECEIVER TUBE COMPLEMENT

Ref. Symbol	*Stock No.*	*JAN Type No.*	*VT Type No.*	*Function*
V-201	2J9002	JAN-9002	VT-202	Oscillator
V-202	2J6AK5	JAN-6AK5	——	Fundamental amplifier
V-203	2J6AK5	JAN-6AK5	——	Fundamental amplifier
V-204	2J6AK5	JAN-6AK5	——	Harmonic generator
V-205	2J6AK5	JAN-6AK5	——	First harmonic generator
V-206	2J6AK5	JAN-6AK5	——	Second harmonic amplifier
V-207	2J12SH7	JAN-12SH7 or	VT-288	Tuning control
	2J12SH7GT	JAN-12SH7GT	VT-288A	
V-208	2J6AK5	JAN-6AK5	——	RF amplifier
V-209	2J9001	JAN-9001	VT-201	First detector
V-210	2J12SG7	JAN-12SG7	VT-209	IF amplifier
V-211	2J12SG7	JAN-12SG7	VT-209	Second IF amplifier
V-212	2J12SG7	JAN-12SG7	VT-209	Third IF amplifier
V-213	2J12H6	JAN-12H6	VT-214	Second detector and AVC
V-214	SJ12SN7	JAN-12SN7 or	——	Noise limiter and a-f cathode follower
	2J12SN7GT	JAN-12SN7GT	——	
V-215	2J12SL7	JAN-12SL7 or	VT-289	Squelch and first AF amplifier
	2J12SL7GT	JAN-12SL7GT	VT-289A	
V-216	2J12SN7	JAN-12SN7 or	——	AVC delay and second AF amplifier
	2J12SN7GT	JAN-12SN7GT	——	
V-217	2J12A6	JAN-12A6 or	VT-134	AF output
	2J12A6GT	JAN-12A6GT	VT-134A	

c. TRANSMITTER TUBE BASE CONNECTIONS.

TABLE 6-3. TRANSMITTER TUBE BASE CONNECTIONS

Tube	*Function*	*Cathode*	*Grid*	*Plate*	*Screen*	*Heater+*	*Heater−*	*Shield*
JAN-6V6GT (V-101)	Osc	8	5	3	4	2	7	1
JAN-6V6GT (V-102)	1st H G	8	5	3	4	2	7	1
JAN-832A (V-103)	2nd H G	4	2-6	top	3	7	1	—
JAN-832A (V-104)	Power Amplr	4	2-6	top	3	1	7	—

TABLE 6-3 (Continued)

Tube	*Function*	*Cathode*	*Grid*	*Plate*	*Screen*	*Heater+*	*Heater –*	*Shield*
JAN-12SH7 (V-105)	Tuning Control	3-5	4	8	6	7	2	1
JAN-6J5 (V-106)	Speech Amplr	8	5	3	—	7	2	1
JAN-6L6GA (V-107)	Modulator	8	5	3	4	7	2	1
JAN-6L6GA (V-108)	Modulator	8	5	3	4	7	2	1
JAN-6V6GT (V-109)	Sidetone	8	5	3	4	7	2	1

d. RECEIVER TUBE BASE CONNECTIONS.

TABLE 6-4. RECEIVER TUBE BASE CONNECTIONS

Tube	*Function*	*Cathode*	*Grid*	*Plate*	*Screen*	*Heater+*	*Heater–*	*Shield*
JAN-9002 (V-201)	Osc	2-7	6	1-5	—	4	3	—
JAN-6AK5 (V-202)	Fund Amplr	2-7	1	5	6	3	4	—
JAN-6AK5 (V-203)	Fund Amplr	2-7	1	5	6	3	4	—
JAN-6AK5 (V-204)	Harm Gen	2-7	1	5	6	3	4	—
JAN-6AK5 (V-205)	1st H A	2-7	1	5	6	3	4	—
JAN-6AK5 (V-206)	2nd H A	2-7	1	5	6	3	4	—
JAN-12SH7 (V-207)	Tuning Control	3-5	4	8	6	2	7	1
JAN-6AK5 (V-208)	RF Amplr	2-7	1	5	6	4	3	—
JAN-9001 (V-209)	1st Detector	2-7	1	5	6	4	3	—
JAN-12SG7 (V-210)	1st IF Amplr	3-5	4	8	6	7	2	1
JAN-12SG7 (V-211)	2nd IF Amplr	3-5	4	8	6	7	2	1
JAN-12SG7 (V-212)	3rd IF Amplr	3-5	4	8	6	7	2	1
JAN-12H6 (V-213)	2nd Detector	8	—	5	—	7	2	1
	AVC	4	—	3	—	7	2	1
JAN-12SN7GT (V-214)	Noise Limiter	6	4	5	—	7	8	—
	Cathode Follower	3	1	2	—	7	8	—
JAN-12SL7GT (V-215)	Squelch	6	4	5	—	7	8	—
	1st Audio Amplr	3	1	2	—	7	8	—
JAN-12SN7GT (V-216)	2nd Audio Amplr	3	1	2	—	8	7	—
	AVC Delay	6	4	5	—	8	7	—
JAN-12A6 (V-217)	Output	8	5	3	4	2	7	1

3. FUSE COMPLEMENT.

Note On Power Junction Box J-68A/ARC-3, the fuse holders were changed from the open clip type to a panel mount type.

Ref. Symbol	*Stock No.*	*Description*	*Function*	*Spares*	*Mfrs. Type No.*
F-401	3Z2595.6	FUSE, cartridge, ½ amp. 250 v., one-time, glass body	Transmitter high voltage fuse	In clip adjacent to active fuse	Littlefuse No. 1007
F-402	3Z2595.6	Same as F-401	Receiver high voltage fuse	In clip adjacent to active fuse	Same as F-401

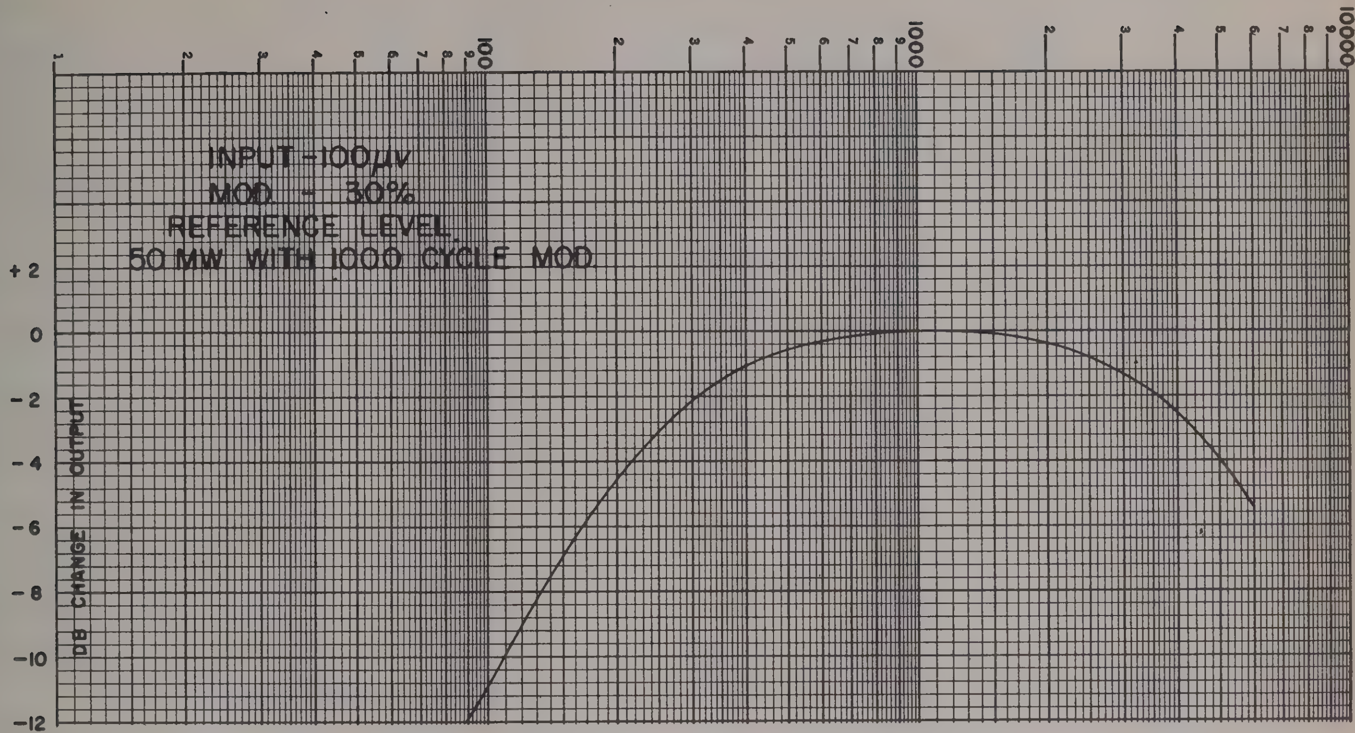


Figure 6-1. Radio Receiver—Fidelity Curve

4. FREQUENCY RANGE.

The frequency range for both transmiting and receiving is from 100 to 156 megacycles.

5. PRESET FREQUENCIES.

Radio Set AN/ARC-3 has 8 preselected frequency channels, Radio Set AN/ARC-36 has 16 and Radio Set AN/ARC-49 has 48. The preselection of these channels is explained in pars. 2*a* and 2*b* section II. Changing the frequency of the set is an automatic operation, performed by pushing any one of the eight channel selector push buttons on the control box, or by changing the channel selector switch or switches if using a control panel.

Note

> When changing frequency of the AN/ARC-36 equipment from the "regular" bank of crystals to the "auxiliary" bank or vice versa, it is necessary to use switch S-1001 on Mounting MT-798A.

6. AF RESPONSE CHARACTERISTICS.

The overall fidelity of the receiver from 300 to 4000 cps is such that the variation from the 1000-cycle response will not exceed +1 or —5 db. The response at 90 cps will be at least 8 db below that at 1000 cps. (See fig. 6-1.)

7. TRANSMITTER FREQUENCY STABILITY.

The frequency stability of the transmitter is determined by its exciting crystal for each channel. To insure that the operating frequency of the crystal does not exceed the frequency tolerance allowed for the crystal unit, the capacity of the crystal circuit does not exceed 40 micromicrofarads; neither is it less than 25 micromicrofarads. The RF voltage across the crystal unit electrodes is no more than 60 volts rms for the AN/ARC-3 or AN/ARC-36 Radio Transmitter and no more than 17 volts rms for the AN/ARC-49 Radio Transmitter with the high activity crystal units. This permits the use of plated electrode type crystal units. The calibration accuracy of the dial used for aligning the tuned circuits of the transmitter is maintained to within 2 per cent of the carrier frequency.

Note

> The capacity of the crystal circuit of the AN/ARC-36 Radio Transmitter may exceed the value given above. This value has been held to a minimum to preserve the frequency stability characteristics of the transmitter.

8. RECEIVER FREQUENCY STABILITY.

The resonant frequency stability of the receiver is determined by the frequency stability of the crystal employed and the IF amplifier. To insure that the operating frequency of the crystal does not exceed the frequency tolerance allowed for the crystal unit, the capacity of the crystal circuit is not more than 35 micromicrofarads and not less than 25 micromicrofarads. The RF voltage across the crystal unit electrodes is no more than 60 volts rms for the AN/ARC-3 or AN/ARC-36 Radio Receiver and no more than 17 volts rms for the AN/ARC-49 Radio Receiver. This permits the use of plated electrode type crystal units.

Note

> The capacity of the crystal circuit of the AN/ARC-36 Radio Receiver may exceed the value given above. This value has been held to a minimum to preserve the frequency stability characteristics of the receiver.

9. NOISE RESPONSE.

a. With no signal input and with the "SQUELCH" control set at minimum, the inherent noise generated in the receiver will result in an AF output of less than 10 milliwatts.

b. With the "SQUELCH" control at maximum, the noise level will not exceed 100 microwatts.

10. RECEIVER DISTORTION.

a. With a 100-microvolt input signal modulated 30 percent with 1000 cps and the output adjusted to 150 milliwatts, the total harmonic distortion in the audio output will not be more than 8 percent.

b. With 10 to 70 percent modulation of the input signals up to 100,000 microvolts or 30 percent modulation of input signals up to 1 volt, the distortion in the audio output will be less than 20 percent for outputs of 1 watt or less.

11. OUTPUT AND INPUT IMPEDANCES.

a. TRANSMITTER.

(1) Microphone input—92 ohms.

(2) Sidetone output on "LO" tap—50 to 600 ohms.

(3) Sidetone output on "HI" tap—600 to 8000 ohms.

(4) Antenna—50 ohms.

b. RECEIVER.

(1) Audio output on "LO" tap—30 ohms.

(2) Audio output on "HI" tap—600 ohms.

(3) Antenna—50 ohms.

12. POWER OUTPUT.

a. TRANSMITTER.—The RF power output capability on "TONE" and "VOICE" modulated carrier will be approximately 8 watts when operating into the antenna.

b. RECEIVER.—The audio power output of the receiver will be approximately 600 milliwatts into a 50-ohm load, using the "LO" tap, with 50 percent modulation of a strong input signal.

13. POWER INPUT REQUIREMENTS.

The power required for this equipment is 28 volts DC. However, the equipment will operate satisfactorily at from 22 to 32 volts DC. The current drain of the various assemblies and circuits at 28 volts DC is listed below. Current drain at 22 and 32 volts DC is given in section I, paragraph 1*d*.

TABLE 6-5. RADIO SET AN/ARC-3—CURRENT DRAIN*

	Transmitter with Receiver Disconnected	*Receiver with Transmitter Disconnected*	*Transmitter and Receiver both Connected*
Filament	2.4 amp	1.45 amp	3.85 amp
Dynamotor	7.0 amp	1.8 amp	8.8 amp
Relays	0.7 amp 0.8†	0.3 amp	0.8 amp 0.9†
Total (Voice Modulation)	10.1 amp 10.2†	3.55 amp	13.45 amp 13.55†
Total (Tone Modulation)	10.3 amp 10.4†	3.55 amp	13.65 amp 13.75†
Standby	2.7 amp 2.8†	3.55 amp	6.05 amp 6.15†
Maximum Starting (½ second)	90.0 amp	28.0 amp	118.0 amp
While Changing Frequencies	11.4 amp 11.6†	4.55 amp	15.75 amp 15.95†

*All figures in this table include power junction box relays.
†For Transmitter T-67/ARC-3 with M-3 Modification, T-67A/ARC-3 or T-67B/ARC-3.

TABLE 6-6. RADIO SET AN/ARC-36—CURRENT DRAIN*

	Transmitter with Receiver Disconnected	*Receiver with Transmitter Disconnected*	*Transmitter and Receiver Both Connected*
Filament	2.4 amp	1.45 amp	3.85 amp
Dynamotor	7.0 amp	1.8 amp	8.8 amp
Relays	0.9 amp 1.0††	0.5 amp	1.2 amp 1.3††
Total (Voice Modulation)	10.3 amp 10.4††	3.75 amp	13.85 amp 13.95††
Total (Tone Modulation)	10.5 amp 10.6††	3.75 amp	14.05 amp 14.15††
Standby	2.9 amp 3.0††	3.75 amp	6.45 amp 6.55††
Maximum Starting (½ second)	90.2 amp	28.2 amp	118.4 amp
While Changing Frequencies	11.6 amp 11.8††	4.75 amp	16.15 amp 16.35††

*All figures in this table include power junction box relays.
††For Transmitter T-312/ARC-36 with M-3 Modification, T-312A/ARC-36 or T-312B/ARC-36.

TABLE 6-7. RADIO SET AN/ARC-49—CURRENT DRAIN*

	Transmitter with Receiver Disconnected	*Receiver with Transmitter Disconnected*	*Transmitter and Receiver both Connected*
Filament	2.4 amp	1.45 amp	3.85 amp
Dynamotor	7.0 amp	1.8 amp	8.8 amp
Relays	0.8 amp	0.3 amp	0.9 amp
Total (Voice Modulation)	10.2 amp	3.55 amp	13.55 amp
Total (Tone Modulation)	10.4 amp	3.55 amp	13.75 amp
Standby	2.8 amp	3.55 amp	6.35 amp
Maximum Starting (½ second)	97.0 amp	35.0 amp	132.0 amp
While Changing Frequencies	15.0 amp	8.0 amp	23.0 amp

*All figures in this table include power junction box relays.

14. DYNAMOTOR DATA.

a. DYNAMOTOR UNIT DY-21/ARC-3.

Input voltage	28 volts
Full load input current	7 amperes
No load input current	1 ampere
Full load intermittent output voltage	410 volts
Intermittent output current (30 seconds on—30 seconds off)	325 milliamperes
No load output voltage	450 volts

b. DYNAMOTOR UNIT DY-22/ARC-3.

Input voltage	28 volts
Full load input current	1.8 amperes
No load input current	0.8 ampere

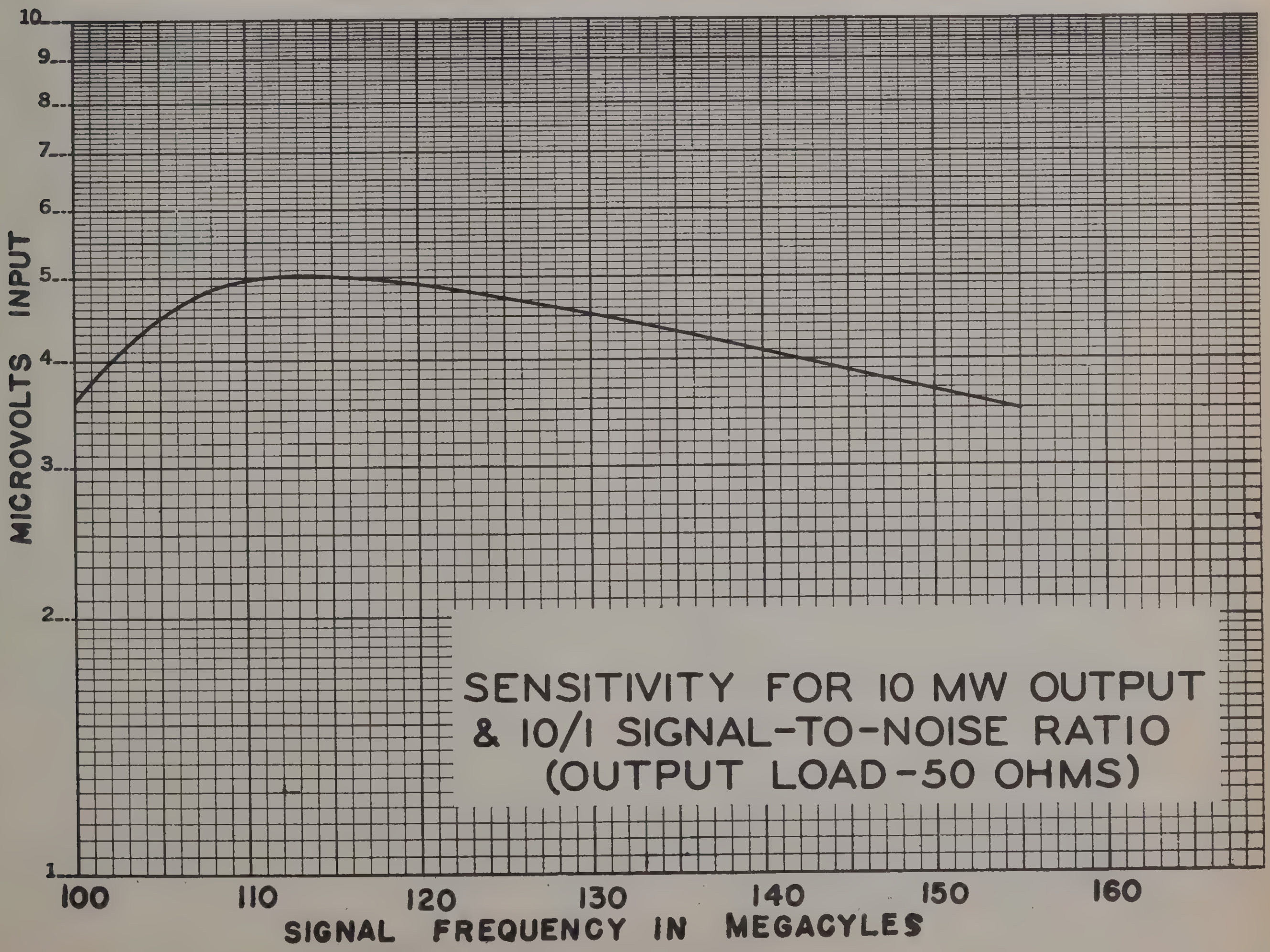


Figure 6-2. Radio Receiver—Sensitivity Curve

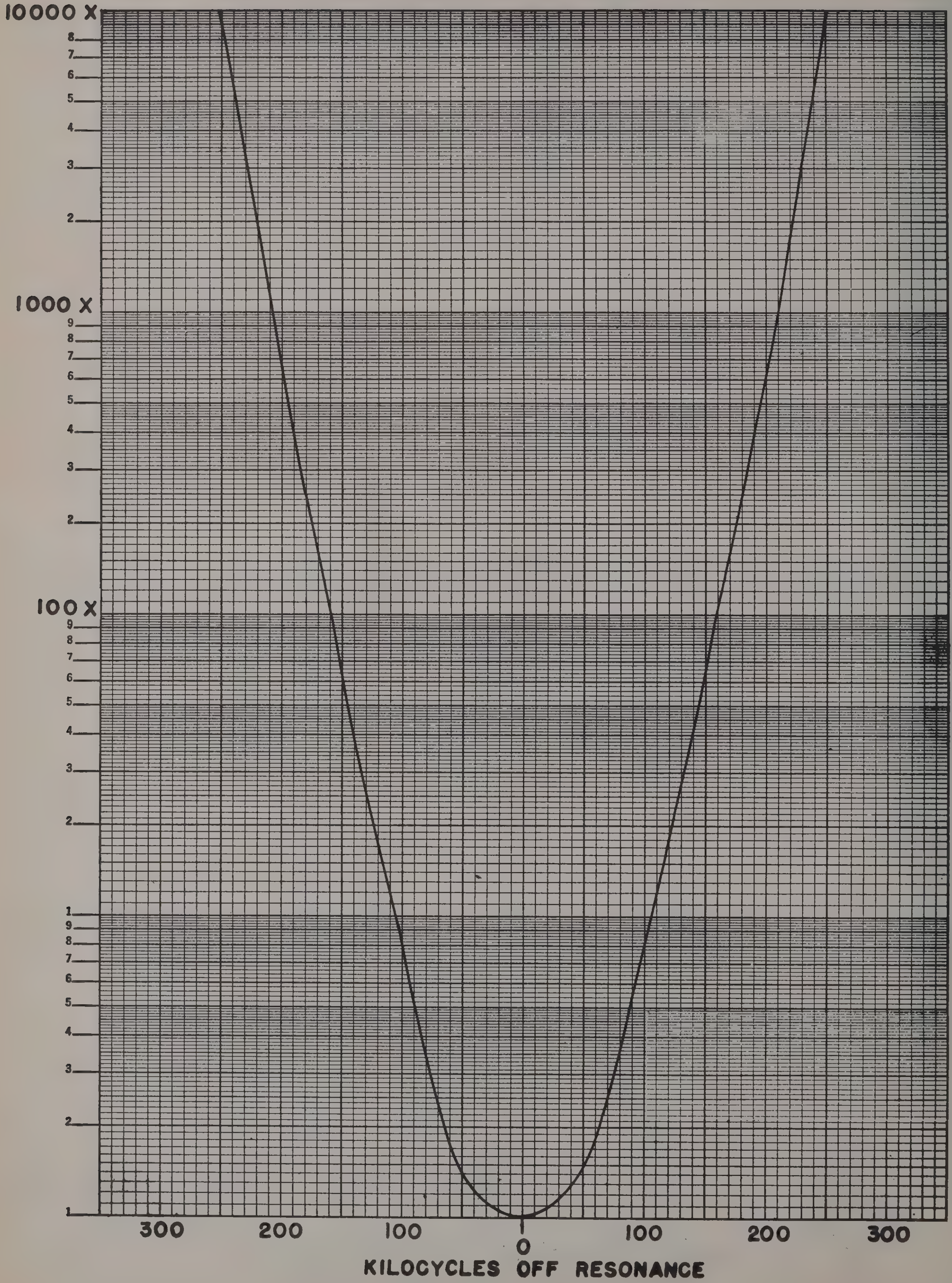


Figure 6-3. Radio Receiver—IF Selectivity Curve

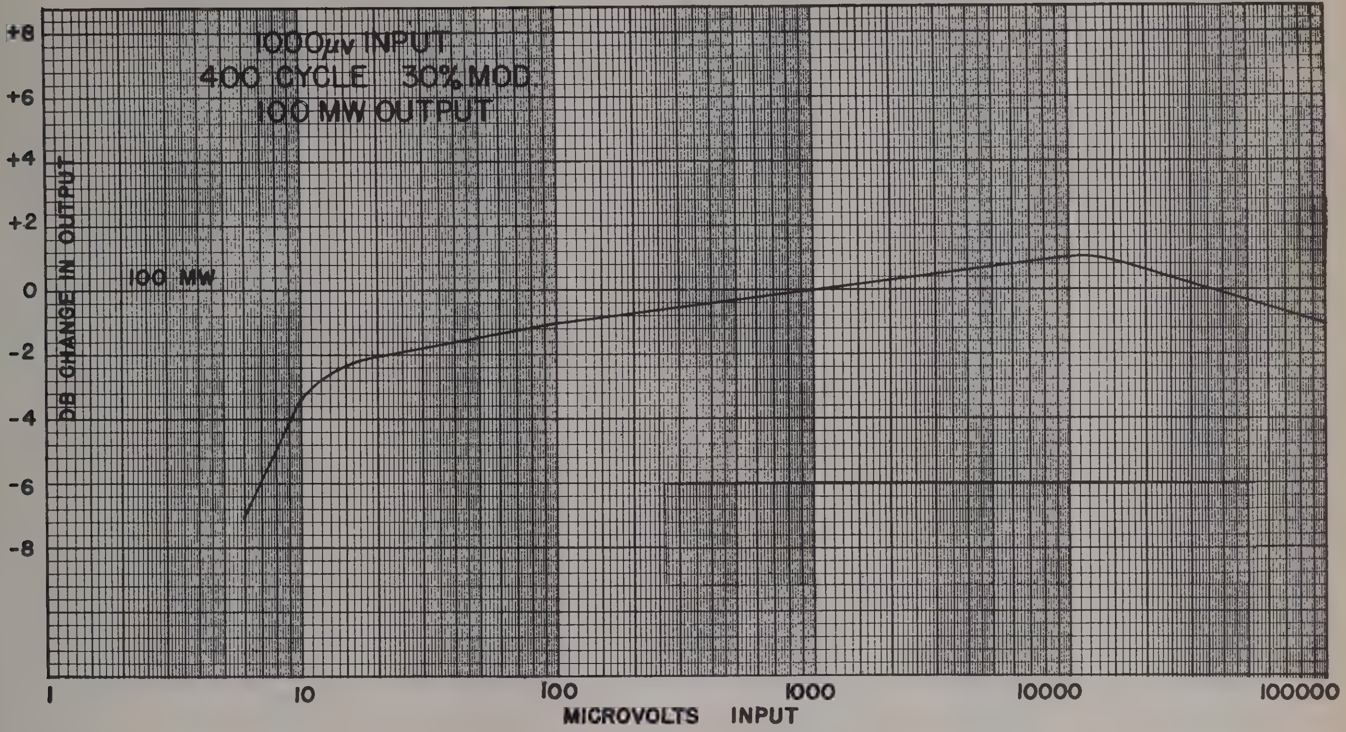


Figure 6-4. Radio Receiver—AVC Curve

Full load continuous output voltage	210 volts
Continuous current	125 milliamperes
No load output voltage	230 volts

15. MODULATION AND FIDELITY.

a. The average percentage modulation, using "TONE," is at least 75 per cent with any load from 50 to 600 ohms on the low impedance tap, or from 600 to 8,000 ohms on the high impedance tap of the sidetone circuit. On voice operation, 95 per cent negative modulation of the carrier with at least 60 per cent positive modulation may be obtained with a microphone input of 0.8 to 1.2 volts.

b. The fidelity of the transmitter over the AF range of 300 to 4000 cps will be within +2 db of the 1000-cycle response. The fidelity of the sidetone output circuit is within +1, —2 db from 1000 cycles, over the 300- to 4000-cycle range. The transmitter is amplitude-modulated by the application of the modulating voltage to the plate and screen circuits of JAN-832A (V-104) and to the screen circuit of JAN-832A (V-103).

16. RECEIVER SENSITIVITY.

a. The sensitivity of the receiver with a 50-ohm antenna will be such that the input signal does not exceed 7 microvolts for an output of 10 milliwatts with a 10 to 1 signal-to-noise ratio.

b. The sensitivity will not exceed 20 microvolts under extreme conditions of temperature and humidity, or reduction of input voltage to 22 volts. A sensitivity curve, showing the sensitivity over the entire frequency range is shown in figure 6-2.

17. RECEIVER SELECTIVITY.

a. GENERAL. — The selectivity (measured band width) of the receiver over its specified frequency range will be found to be within the limiting values given in figure 6-3. The values obtained were measured at a 10-milliwatt level by the standard, single-signal generator method.

b. TOTAL BANDWIDTH IN KILOCYCLES

	Minimum kc	*Maximum kc*				
at:	2x	2x	10x	100x	1000x	10,000x
kc:	100	150	230	335	445	550

18. AUTOMATIC VOLUME CONTROL PERFORMANCE.

The automatic volume control action will be such that the audio output power does not change by more than 6 db at any input from 10 to 1000 microvolts, or 2 db from 1000 microvolts to 1 volt. An AVC performance curve is shown in figure 6-4.

19. SQUELCH CIRCUIT.

A squelch circuit is provided to suppress by at least 20 decibels background noise of less than 20 microvolts, average strength. This circuit can be adjusted from the front panel of the receiver by means of a screw driver. The range of this control is from 0 microvolts to an upper limit of approximately 10 microvolts.

TABLE 6-8. CRYSTAL VS. CARRIER FREQUENCIES

Carrier Mc	*Receiver Kc*	*Transmitter Kc*
100.08	8007.27	5560.0
100.26	8023.64	5570.0
100.44	8040.00	5580.0
100.62	8056.36	5590.0
100.80	8072.73	5600.0
100.98	8089.09	5610.0
101.16	8105.45	5620.0
101.34	8121.82	5630.0
101.52	8138.18	5640.0
101.70	8154.55	5650.0
101.88	8170.91	5660.0
102.06	8187.27	5670.0
102.24	8203.64	5680.0
102.42	8220.00	5690.0
102.60	8236.36	5700.0
102.78	8252.73	5710.0
102.96	8269.09	5720.0
103.14	8285.45	5730.0
103.32	8301.82	5740.0
103.50	8318.18	5750.0
103.68	8334.55	5760.0
103.86	8350.91	5770.0
104.04	8367.27	5780.0
104.22	8383.64	5790.0
104.40	8400.00	5800.0
104.58	8416.36	5810.0
104.76	8432.73	5820.0
104.94	8449.09	5830.0
105.12	8465.45	5840.0
105.30	8481.82	5850.0
105.48	8498.18	5860.0
105.66	8514.55	5870.0
105.84	8530.91	5880.0
106.02	8547.27	5890.0
106.20	8563.64	5900.0
106.38	8580.00	5910.0
106.56	8596.36	5920.0
106.74	8612.73	5930.0
106.92	8629.09	5940.0
107.10	8645.45	5950.0
107.28	8661.82	5960.0
107.46	8678.18	5970.0
107.64	8694.55	5980.0
107.82	8710.91	5990.0
108.00	8000.00	6000.0
108.18	8015.00	6010.0
108.36	8030.00	6020.0
108.54	8045.00	6030.0
108.72	8060.00	6040.0
108.90	8075.00	6050.0
109.08	8090.00	6060.0
109.26	8105.00	6070.0
109.44	8120.00	6080.0
109.62	8135.00	6090.0
109.80	8150.00	6100.0
109.98	8165.00	6110.0
110.16	8180.00	6120.0
110.34	8195.00	6130.0
110.52	8210.00	6140.0
110.70	8225.00	6150.0
110.88	8240.00	6160.0
111.06	8255.00	6170.0
111.24	8270.00	6180.0
111.42	8285.00	6190.0
111.60	8300.00	6200.0
111.78	8315.00	6210.0
111.96	8330.00	6220.0
112.14	8345.00	6230.0
112.32	8360.00	6240.0
112.50	8375.00	6250.0
112.68	8390.00	6260.0
112.86	8405.00	6270.0
113.04	8420.00	6280.0
113.22	8435.00	6290.0
113.40	8450.00	6300.0
113.58	8465.00	6310.0
113.76	8480.00	6320.0
113.94	8495.00	6330.0
114.12	8510.00	6340.0
114.30	8525.00	6350.0
114.48	8540.00	6360.0
114.66	8555.00	6370.0
114.84	8570.00	6380.0
115.02	8585.00	6390.0
115.20	8600.00	6400.0
115.38	8615.00	6410.0
115.56	8630.00	6420.0
115.74	8645.00	6430.0
115.92	8660.00	6440.0
116.10	8007.69	6450.0
116.28	8021.54	6460.0
116.46	8035.38	6470.0
116.64	8049.23	6480.0
116.82	8063.08	6490.0
117.00	8076.92	6500.0
117.18	8090.77	6510.0
117.36	8104.62	6520.0
117.54	8118.46	6530.0
117.72	8132.31	6540.0
117.90	8146.15	6550.0
118.08	8160.00	6560.0
118.26	8173.85	6570.0
118.44	8187.69	6580.0
118.62	8201.54	6590.0
118.80	8215.38	6600.0
118.98	8229.23	6610.0
119.16	8243.08	6620.0
119.34	8256.92	6630.0
119.52	8270.77	6640.0
119.70	8284.62	6650.0
119.88	8298.46	6660.0
120.06	8312.31	6670.0
120.24	8326.15	6680.0
120.42	8340.00	6690.0
120.60	8353.85	6700.0
120.78	8367.69	6710.0
120.96	8381.54	6720.0
121.14	8395.38	6730.0
121.32	8409.23	6740.0
121.50	8423.08	6750.0
121.68	8436.92	6760.0
121.86	8450.77	6770.0
122.04	8464.62	6780.0
122.22	8478.46	6790.0
122.40	8492.31	6800.0
122.58	8506.15	6810.0
122.76	8520.00	6820.0
122.94	8533.85	6830.0
123.12	8547.69	6840.0
123.30	8561.54	6850.0
123.48	8575.38	6860.0
123.66	8589.23	6870.0
123.84	8603.08	6880.0
124.02	8001.43	6890.0
124.20	8014.29	6900.0

TABLE 6-8 (Continued)

Carrier *Mc*	*Receiver* *Kc*	*Transmitter* *Kc*
124.38	8027.14	6910.0
124.56	8040.00	6920.0
124.74	8052.86	6930.0
124.92	8065.71	6940.0
125.10	8078.57	6950.0
125.28	8091.43	6960.0
125.46	8104.29	6970.0
125.64	8117.14	6980.0
125.82	8130.00	6990.0
126.00	8142.86	7000.0
126.18	8155.71	7010.0
126.36	8168.57	7020.0
126.54	8181.43	7030.0
126.72	8194.29	7040.0
126.90	8207.14	7050.0
127.08	8220.00	7060.0
127.26	8232.86	7070.0
127.44	8245.71	7080.0
127.62	8258.57	7090.0
127.80	8271.43	7100.0
127.98	8284.29	7110.0
128.16	8297.14	7120.0
128.34	8310.00	7130.0
128.52	8322.86	7140.0
128.70	8335.71	7150.0
128.88	8348.57	7160.0
129.06	8361.43	7170.0
129.24	8374.29	7180.0
129.42	8387.14	7190.0
129.60	8400.00	7200.0
129.78	8412.86	7210.0
129.96	8425.71	7220.0
130.14	8438.57	7230.0
130.32	8451.43	7240.0
130.50	8464.29	7250.0
130.68	8477.14	7260.0
130.86	8490.00	7270.0
131.04	8502.86	7280.0
131.22	8515.71	7290.0
131.40	8528.57	7300.0
131.58	8541.43	7310.0
131.76	8554.29	7320.0
131.94	8567.14	7330.0
132.12	8008.00	7340.0
132.30	8020.00	7350.0
132.48	8032.00	7360.0
132.66	8044.00	7370.0
132.84	8056.00	7380.0
133.02	8068.00	7390.0
133.20	8080.00	7400.0
133.38	8092.00	7410.0
133.56	8104.00	7420.0
133.74	8116.00	7430.0
133.92	8128.00	7440.0
134.10	8140.00	7450.0
134.28	8152.00	7460.0
134.46	8164.00	7470.0
134.64	8176.00	7480.0
134.82	8188.00	7490.0
135.00	8200.00	7500.0
135.18	8212.00	7510.0
135.36	8224.00	7520.0
135.54	8236.00	7530.0
135.72	8248.00	7540.0
135.90	8260.00	7550.0
136.08	8272.00	7560.0
136.26	8284.00	7570.0
136.44	8296.00	7580.0

TABLE 6-8 (Continued)

Carrier *Mc*	*Receiver* *Kc*	*Transmitter* *Kc*
136.62	8308.00	7590.0
136.80	8320.00	7600.0
136.98	8332.00	7610.0
137.16	8344.00	7620.0
137.34	8356.00	7630.0
137.52	8368.00	7640.0
137.70	8380.00	7650.0
137.88	8392.00	7660.0
138.06	8404.00	7670.0
138.24	8416.00	7680.0
138.42	8428.00	7690.0
138.60	8440.00	7700.0
138.78	8452.00	7710.0
138.96	8464.00	7720.0
139.14	8476.00	7730.0
139.32	8488.00	7740.0
139.50	8500.00	7750.0
139.68	8512.00	7760.0
139.86	8524.00	7770.0
140.04	8002.50	7780.0
140.22	8013.75	7790.0
140.40	8025.00	7800.0
140.58	8036.25	7810.0
140.76	8047.50	7820.0
140.94	8058.75	7830.0
141.12	8070.00	7840.0
141.30	8081.25	7850.0
141.48	8092.50	7860.0
141.66	8103.75	7870.0
141.84	8115.00	7880.0
142.02	8126.25	7890.0
142.20	8137.50	7900.0
142.38	8148.75	7910.0
142.56	8160.00	7920.0
142.74	8171.25	7930.0
142.92	8182.50	7940.0
143.10	8193.75	7950.0
143.28	8205.00	7960.0
143.46	8216.25	7970.0
143.64	8227.50	7980.0
143.82	8238.75	7990.0
144.00	8250.00	8000.0
144.18	8261.25	8010.0
144.36	8272.50	8020.0
144.54	8283.75	8030.0
144.72	8295.00	8040.0
144.90	8306.25	8050.0
145.08	8317.50	8060.0
145.26	8328.75	8070.0
145.44	8340.00	8080.0
145.62	8351.25	8090.0
145.80	8362.50	8100.0
145.98	8373.75	8110.0
146.16	8385.00	8120.0
146.34	8396.25	8130.0
146.52	8407.50	8140.0
146.70	8418.75	8150.0
146.88	8430.00	8160.0
147.06	8441.25	8170.0
147.24	8452.50	8180.0
147.42	8463.75	8190.0
147.60	8475.00	8200.0
147.78	8486.25	8210.0
147.96	8497.50	8220.0
148.14	8008.24	8230.0
148.32	8018.82	8240.0
148.50	8029.41	8250.0
148.68	8040.00	8260.0

TABLE 6-8 (Continued)

Carrier Mc	*Receiver Kc*	*Transmitter Kc*
148.86	8050.59	8270.0
149.04	8061.18	8280.0
149.22	8071.76	8290.0
149.40	8082.35	8300.0
149.58	8092.94	8310.0
149.76	8103.53	8320.0
149.94	8114.12	8330.0
150.12	8124.71	8340.0
150.30	8135.29	8350.0
150.48	8145.88	8360.0
150.66	8156.47	8370.0
150.84	8167.06	8380.0
151.02	8177.65	8390.0
151.20	8188.24	8400.0
151.38	8198.82	8410.0
151.56	8209.41	8420.0
151.74	8220.00	8430.0
151.92	8230.59	8440.0
152.10	8241.18	8450.0
152.28	8251.76	8460.0
152.46	8262.35	8470.0
152.64	8272.94	8480.0
152.82	8283.53	8490.0
153.00	8294.12	8500.0
153.18	8304.71	8510.0
153.36	8315.29	8520.0
153.54	8325.88	8530.0
153.72	8336.47	8540.0
153.90	8347.06	8550.0
154.08	8357.65	8560.0
154.26	8368.24	8570.0
154.44	8378.82	8580.0
154.62	8389.41	8590.0
154.80	8400.00	8600.0
154.98	8410.59	8610.0
155.16	8421.18	8620.0
155.34	8431.76	8630.0
155.52	8442.35	8640.0
155.70	8452.94	8650.0
155.88	8463.53	8660.0

TABLE 6-9. FREQUENCIES AND SETTINGS FOR OPERATION OF RADIO SET AN/ARC-49

Carrier Mc	*Channel*	*Transmitter Crystal Freq. Kc*	*Receiver Crystal Freq. Kc*	*Harmonic Selector Switch Setting*
116.10	"A-1"	6450.00	8007.69	115.00 Mc
117.90	"A-2"	6550.00	8146.15	
118.10	"A-3"	6561.11	8161.54	
118.30	"A-4"	6572.22	8176.92	
118.50	"A-5"	6583.33	8192.31	
118.70	"A-6"	6594.44	8207.69	
118.90	"A-7"	6605.56	8223.08	118.00 Mc
119.10	"A-8"	6616.67	8238.46	
119.30	"A-9"	6627.78	8253.85	
119.50	"A-10"	6638.89	8269.23	
119.70	"A-11"	6650.00	8284.62	
119.90	"A-12"	6661.11	8300.00	
120.10	"B-1"	6672.22	8315.38	119.00 Mc
120.30	"B-2"	6683.33	8330.77	
120.50	"B-3"	6694.44	8346.15	
120.70	"B-4"	6705.56	8361.54	
120.90	"B-5"	6716.67	8376.92	
121.10	"B-6"	6727.78	8392.31	
121.30	"B-7"	6738.89	8407.69	120.00 Mc
121.50	"B-8"	6750.00	8423.08	
121.70	"B-9"	6761.11	8438.46	
121.90	"B-10"	6772.22	8453.85	
122.10	"B-11"	6783.33	8469.23	
122.50	"B-12"	6805.56	8500.00	
123.70	"C-1"	6872.22	8592.31	122.00 Mc
123.90	"C-2"	6883.33	8607.69	
124.10	"C-3"	6894.44	8007.14	
124.30	"C-4"	6905.56	8021.43	
124.50	"C-5"	6916.67	8035.71	
124.70	"C-6"	6927.78	8050.00	
124.90	"C-7"	6938.89	8064.29	124.00 Mc
125.10	"C-8"	6950.00	8078.57	
125.30	"C-9"	6961.11	8092.86	
125.50	"C-10"	6972.22	8107.14	
126.18	"C-11"	7010.00	8155.71	
126.70	"C-12"	7038.89	8192.86	

TABLE 6-9 (Continued)

Carrier Mc	*Channel*	*Transmitter Crystal Freq. Kc*	*Receiver Crystal Freq. Kc*	*Harmonic Selector Switch Setting*
132.30	"D-1"	7350.00	8020.00	
134.10	"D-2"	7450.00	8140.00	
135.00	"D-3"	—	8200.00	132.00 Mc
135.90	"D-3"	7550.00	—	
136.80	"D-4"	7600.00	8320.00	See Note
137.70	"D-5"	7650.00	8380.00	
137.88	"D-6"	7660.00	8392.00	
140.58	"D-7"	7810.00	8036.25	
142.02	"D-8"	7890.00	8126.25	
142.74	"D-9"	7930.00	8171.25	140.00 Mc
143.64	"D-10"	7980.00	8227.50	
	"D-11"			
	"D-12"			

Note This setting is nominal and varies from set to set. See Note par. 2*b*(2)(*c*), section II.

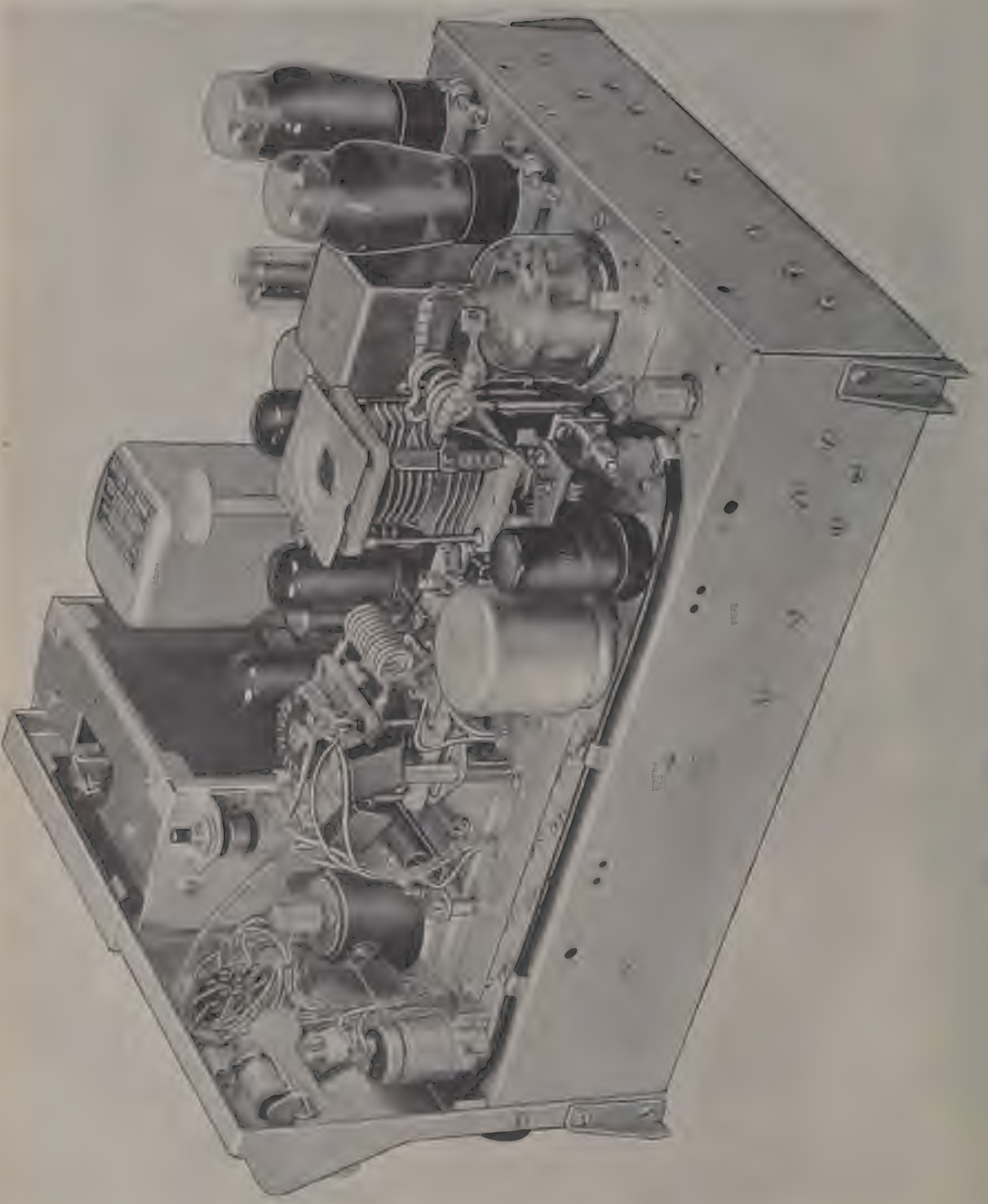


Figure 6-5. Radio Transmitter T-67/ARC-3—Rear Diagonal View

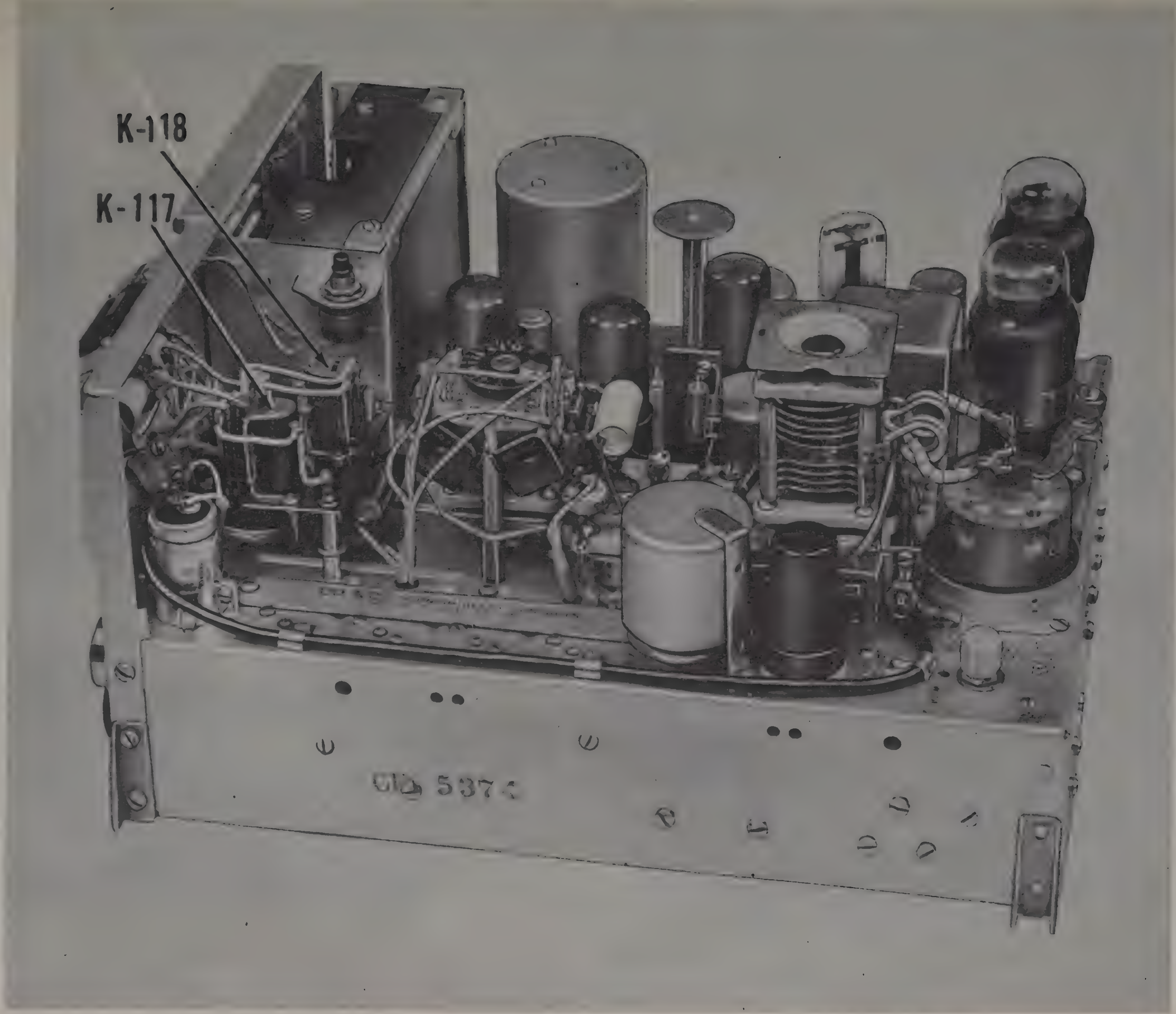


Figure 6-6. Radio Transmitter T-67/ARC-3 with Modification M-3—Interior Diagonal Top View

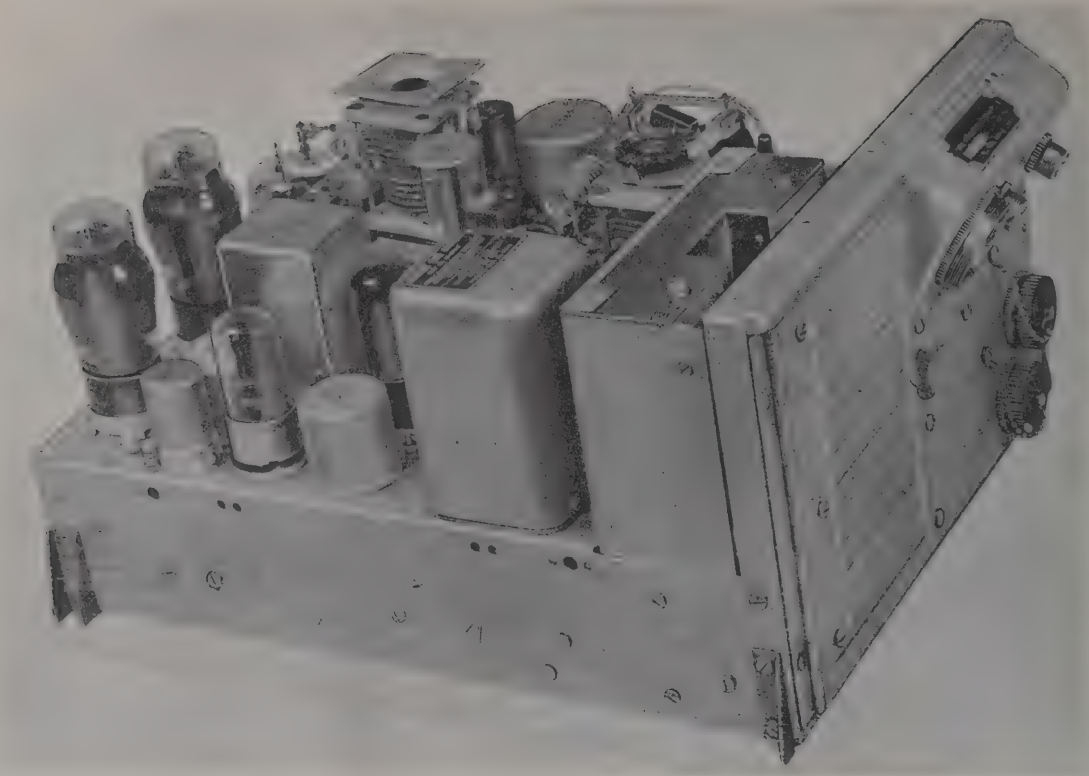


Figure 6-7. Radio Transmitter T-67/ARC-3—Front Diagonal View

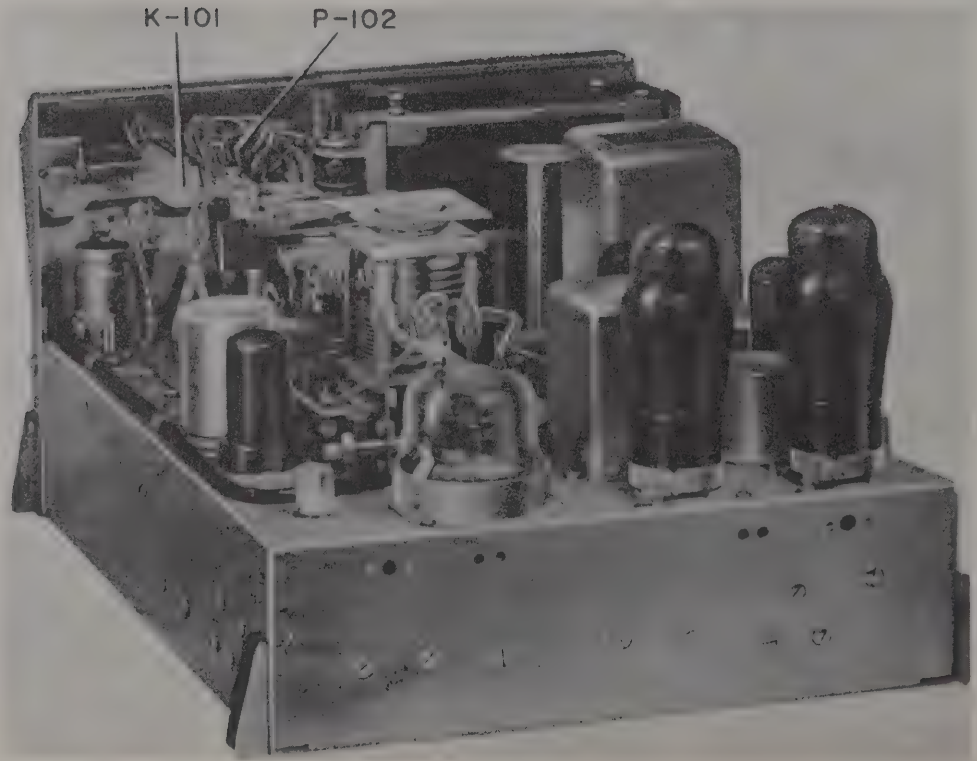


Figure 6-8. Radio Transmitter T-67/ARC-3—Rear View

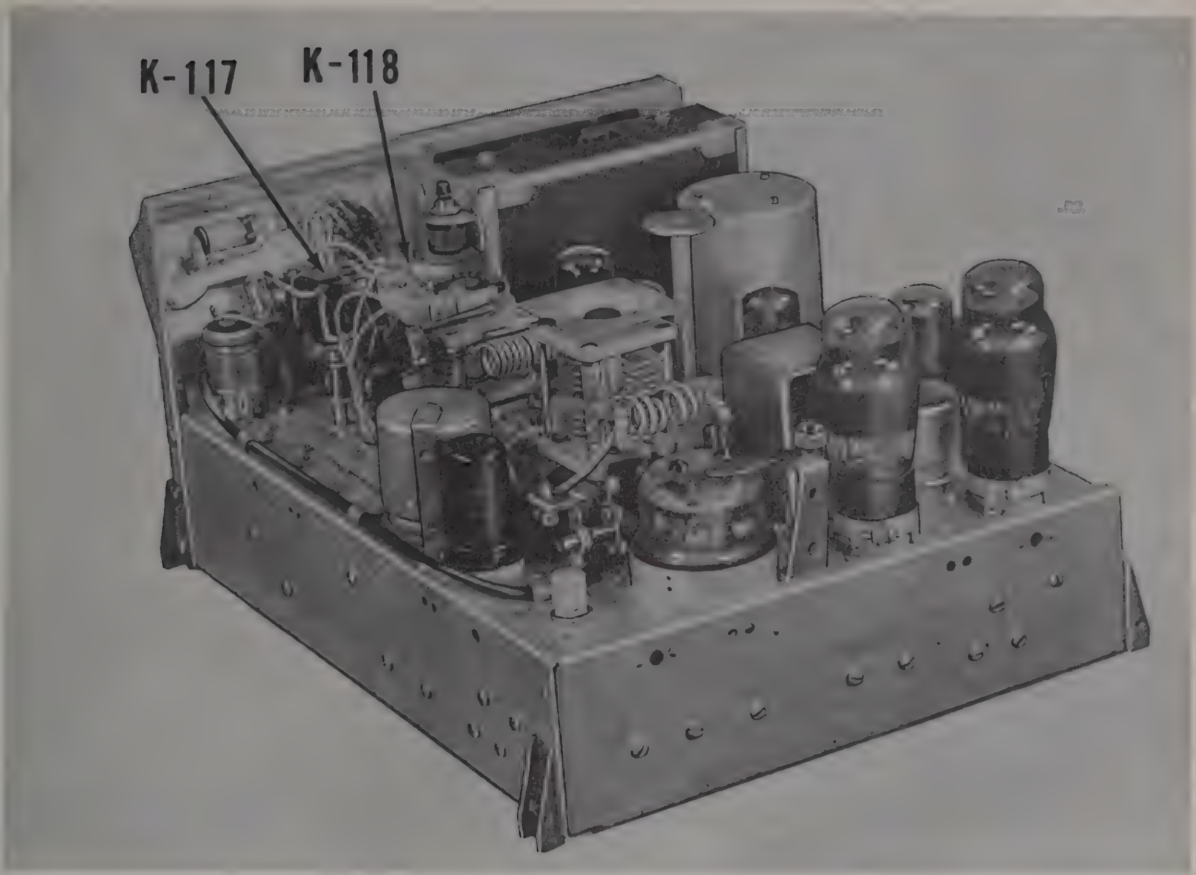


Figure 6-9. Radio Transmitter T-67/ARC-3 with M-3 Modification—Diagonal Rear View, Cover Removed

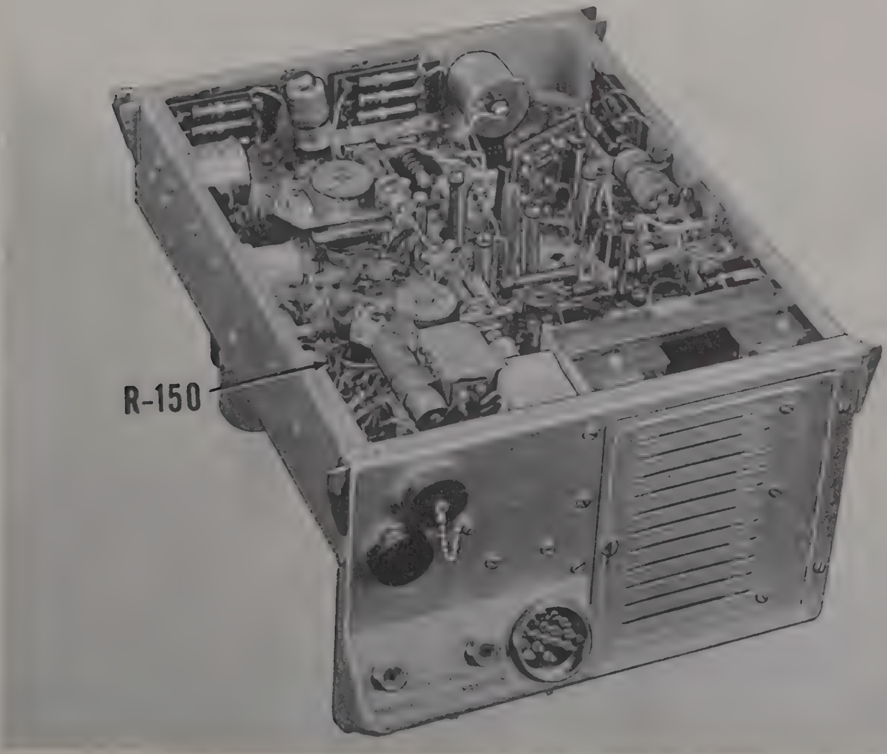


Figure 6-10. Radio Transmitter T-67/ARC-3 with M-3 Modification—Diagonal Interior Bottom View

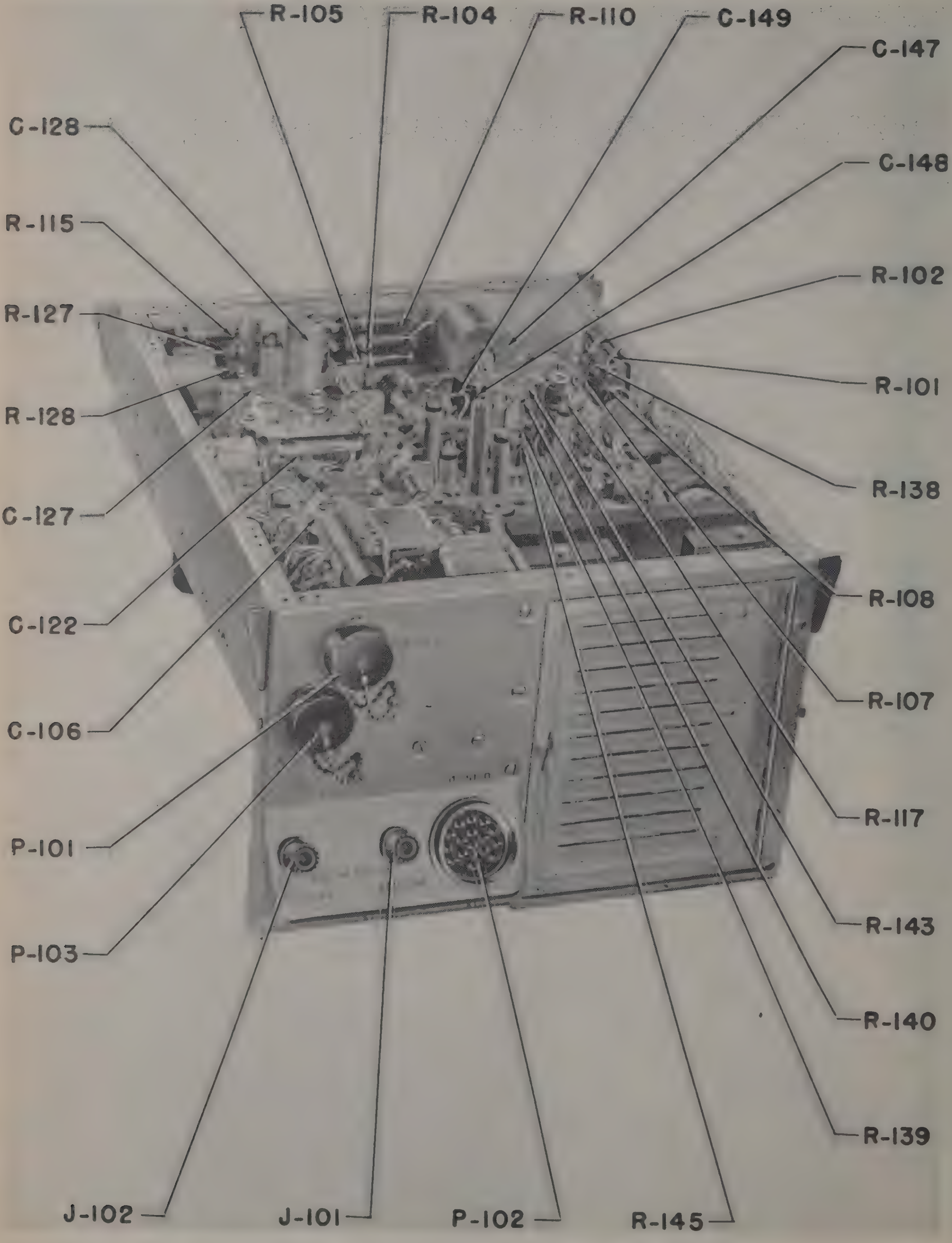

R-105
R-104
R-110
C-149
C-147
C-128
C-148
R-115
R-102
R-127
R-101
R-128
R-138
C-127
C-122
R-108
R-107
C-106
P-101
R-117
P-103
R-143
R-140
R-139
J-102
J-101
P-102
R-145

Figure 6-11. Radio Transmitter T-67/ARC-3—Bottom View

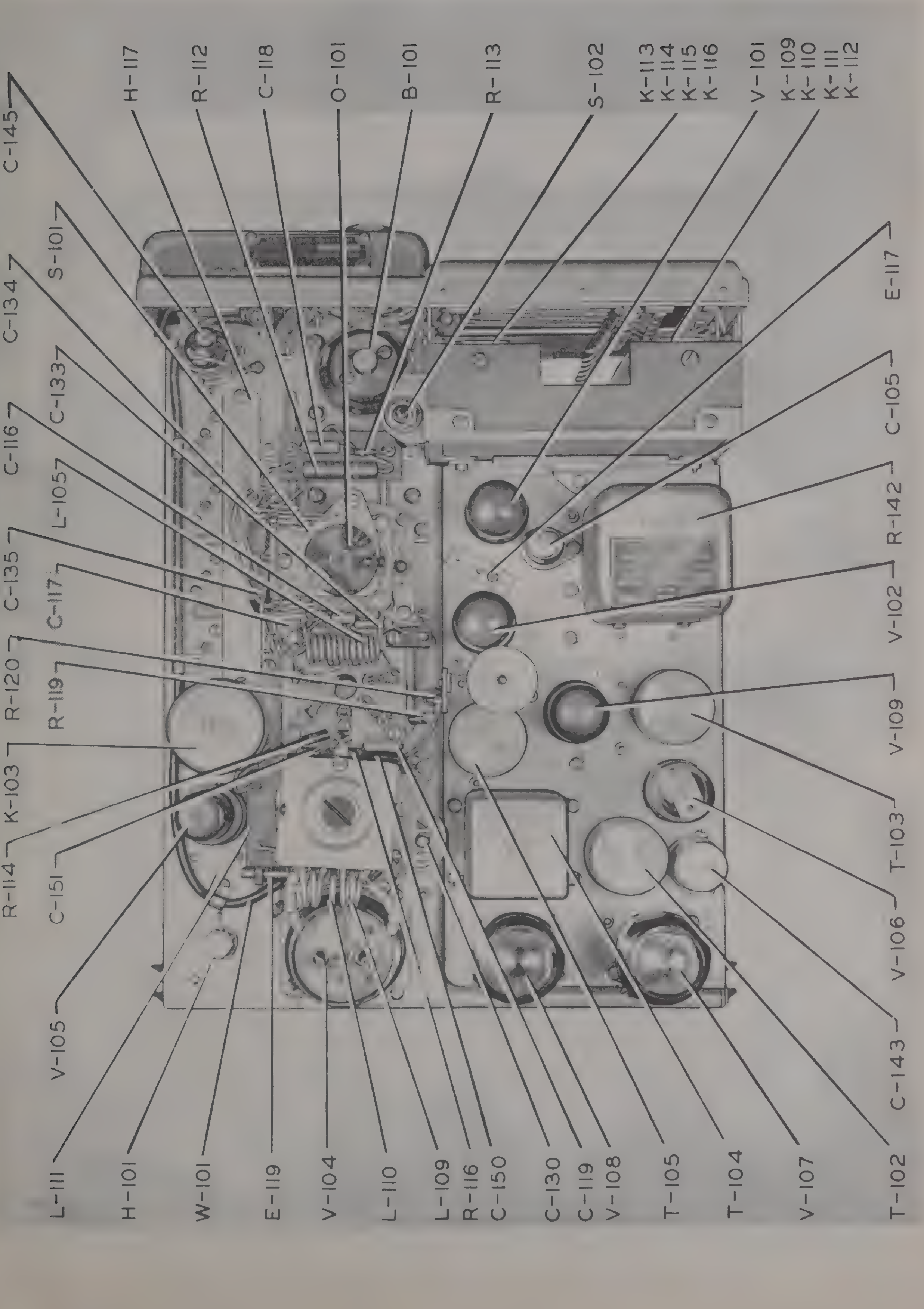

C-145
S-101
C-134
C-133
C-116
L-105
C-135
C-117
R-120
R-119
K-103
R-114
C-151
V-105
H-117
R-112
C-118
O-101
B-101
R-113
S-102
K-113
K-114
K-115
K-116
V-101
K-109
K-110
K-111
K-112
E-117
C-105
R-142
V-102
V-109
T-103
V-106
C-143
L-111
H-101
W-101
E-119
V-104
L-110
L-109
R-116
C-150
C-130
C-119
V-108
T-105
T-104
V-107
T-102

Figure 6-12. Radio Transmitter T-67/ARC-3—Top View

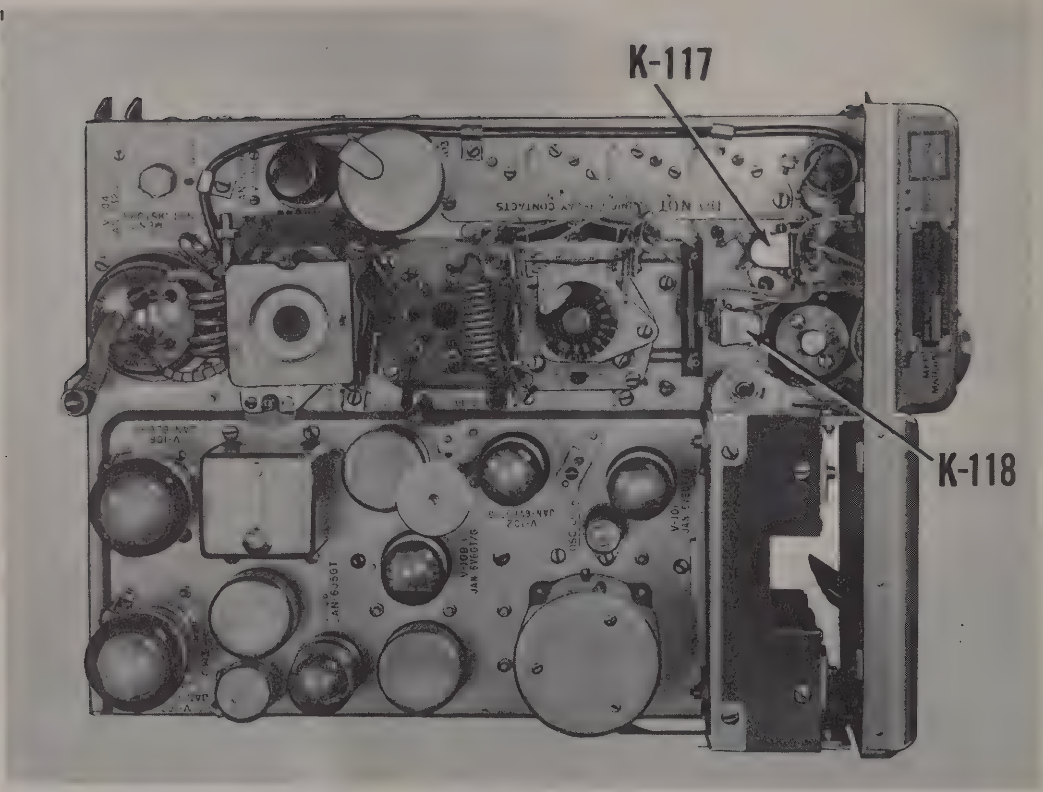


Figure 6-13. Radio Transmitter T-67/ARC-3 with M-3 Modification—Top Interior View

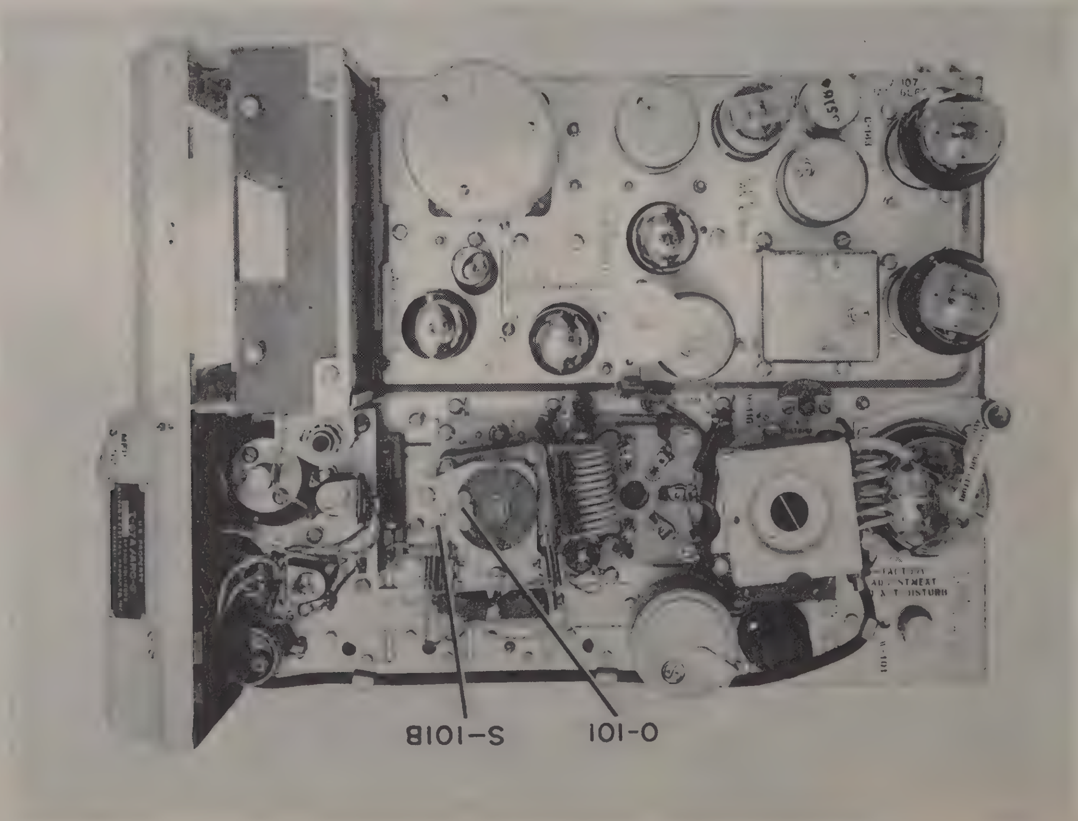


Figure 6-14. Radio Transmitter T-67A/ARC-3—Top Interior View

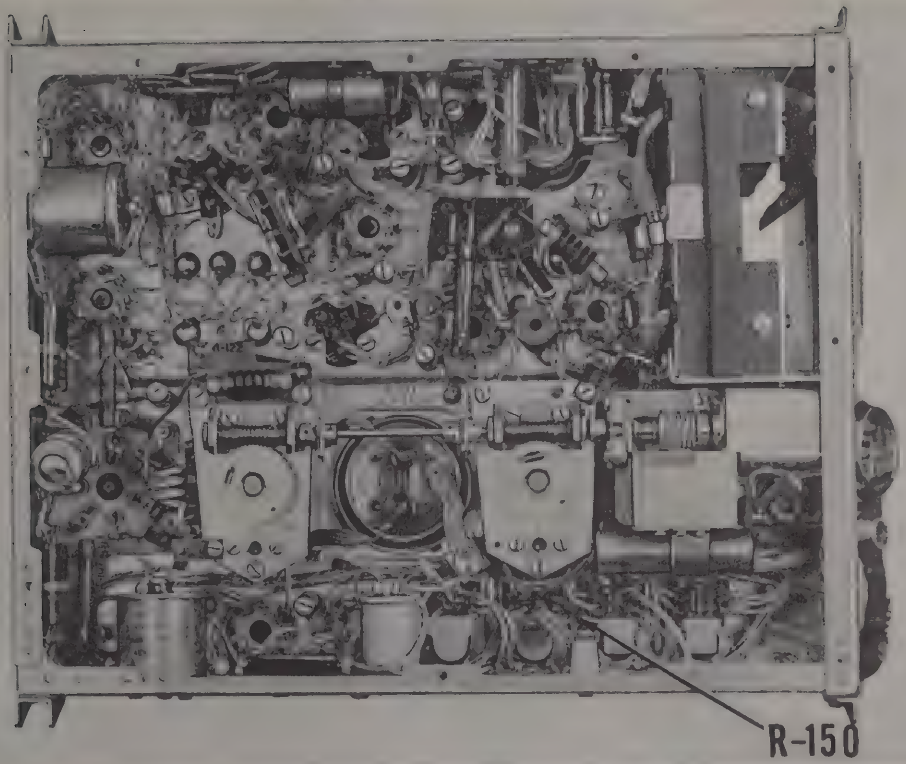


Figure 6-15. Radio Transmitter T-67/ARC-3 with M-3 Modification—Bottom Interior View

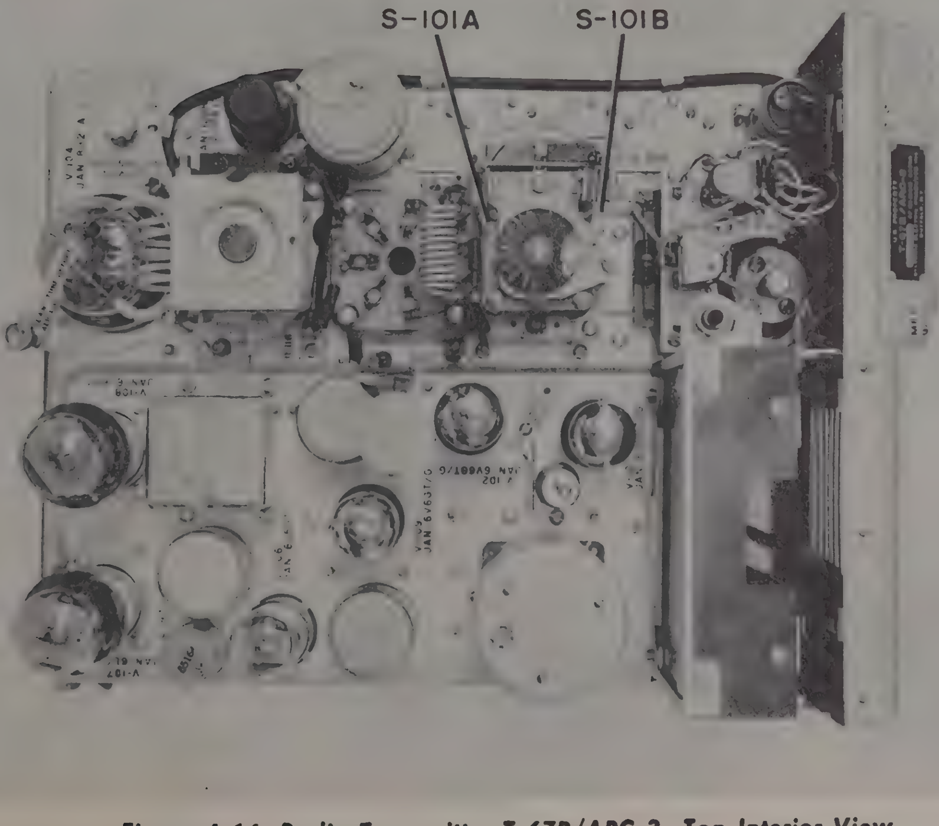


Figure 6-16. Radio Transmitter T-67B/ARC-3—Top Interior View

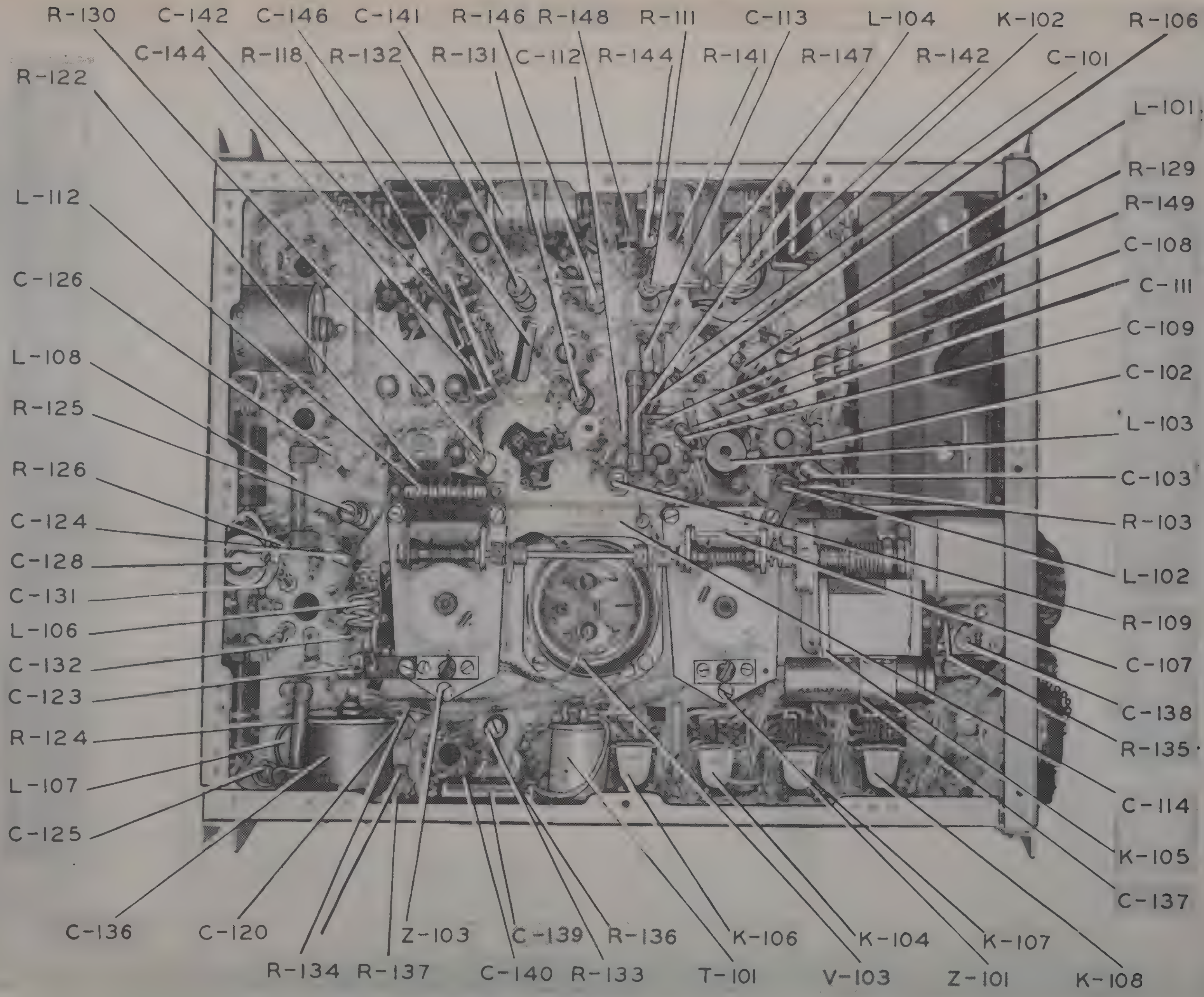

R-130
C-142
C-146
C-141
R-146
R-148
R-111
C-113
L-104
K-102
R-106
R-122
C-144
R-118
R-132
R-131
C-112
R-144
R-141
R-147
R-142
C-101
L-101
R-129
R-149
C-108
C-111
C-109
C-102
L-103
C-103
R-103
L-102
R-109
C-107
C-138
R-135
C-114
K-105
C-137
L-112
C-126
L-108
R-125
R-126
C-124
C-128
C-131
L-106
C-132
C-123
R-124
L-107
C-125
C-136
C-120
Z-103
C-139
R-136
K-106
K-104
K-107
R-134
R-137
C-140
R-133
T-101
V-103
Z-101
K-108

Figure 6-17. Radio Transmitter T-67/ARC-3—Bottom View

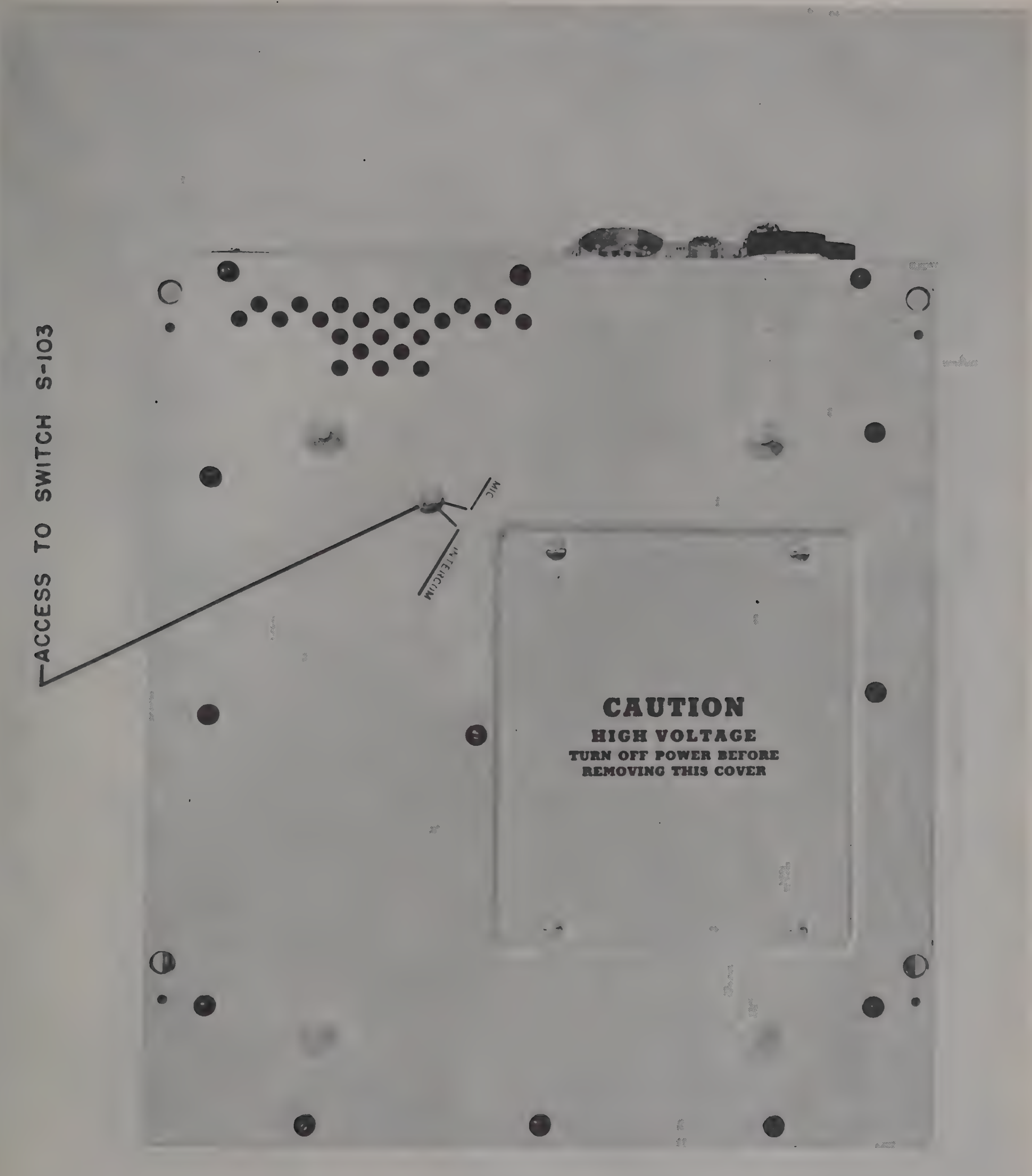

ACCESS TO SWITCH S-103
MIC
INTERCOM
CAUTION
HIGH VOLTAGE
TURN OFF POWER BEFORE
REMOVING THIS COVER

Figure 6-18. Radio Transmitter T-67B/ARC-3—Bottom View

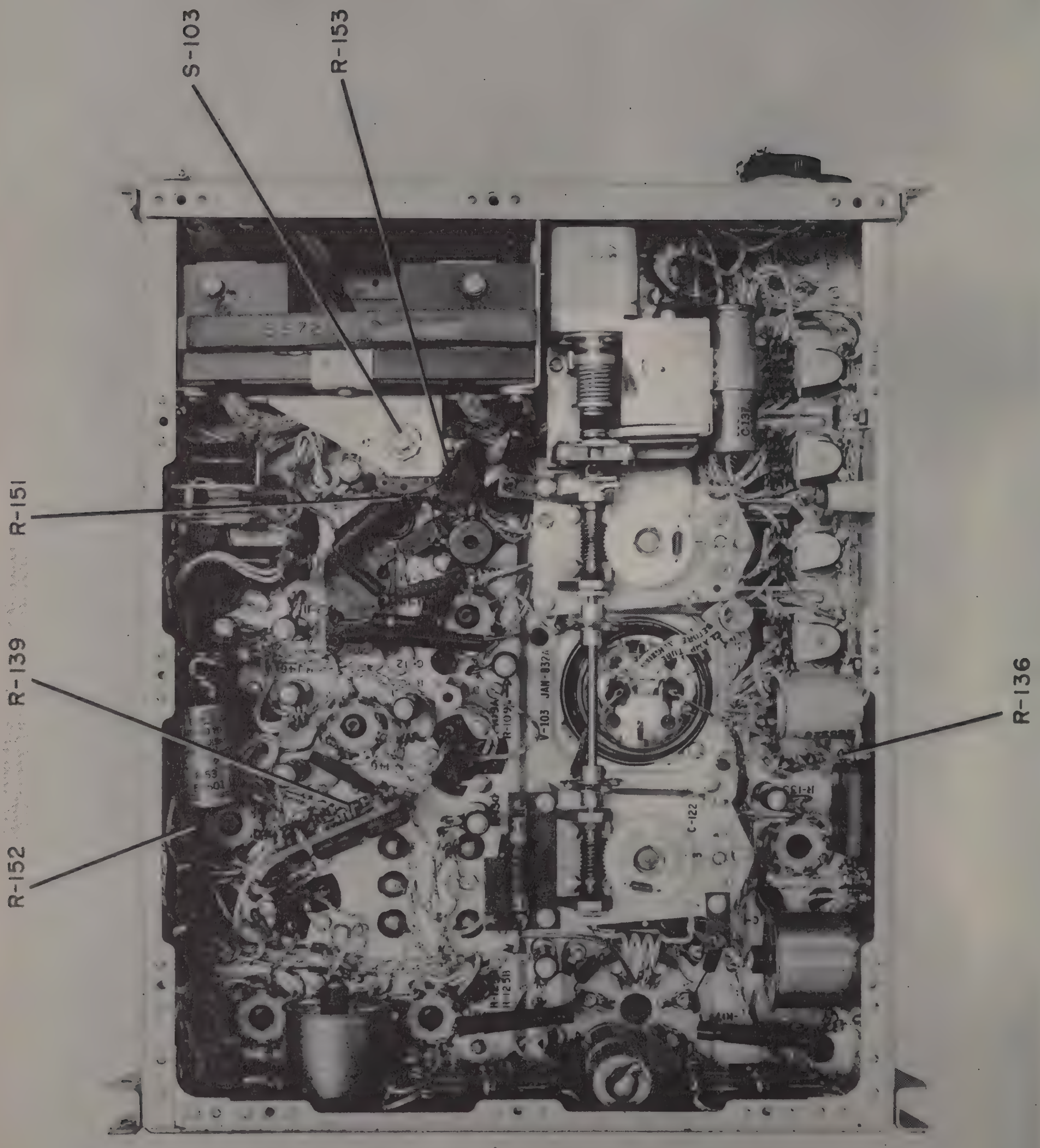

S-103
R-153
R-151
R-139
R-152
R-136

Figure 6-19. Radio Transmitter T-67B/ARC-3—Bottom View, Cover Removed

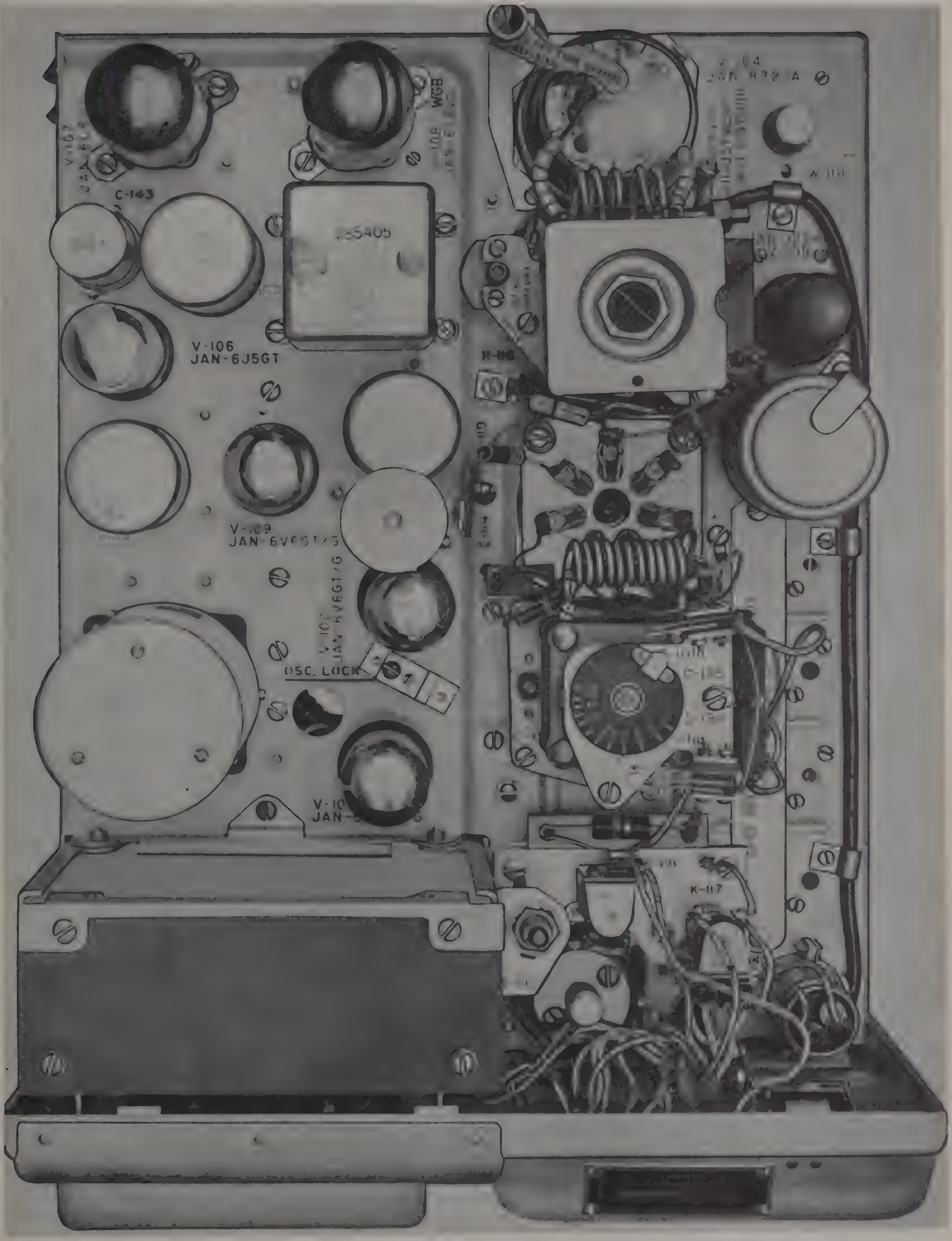

C-143
V-106
JAN-6J5GT
V-109
JAN-6V6GT/G
OSC. LOCK
K-117

Figure 6-20. Radio Transmitter T-452/ARC-49—Top Interior View

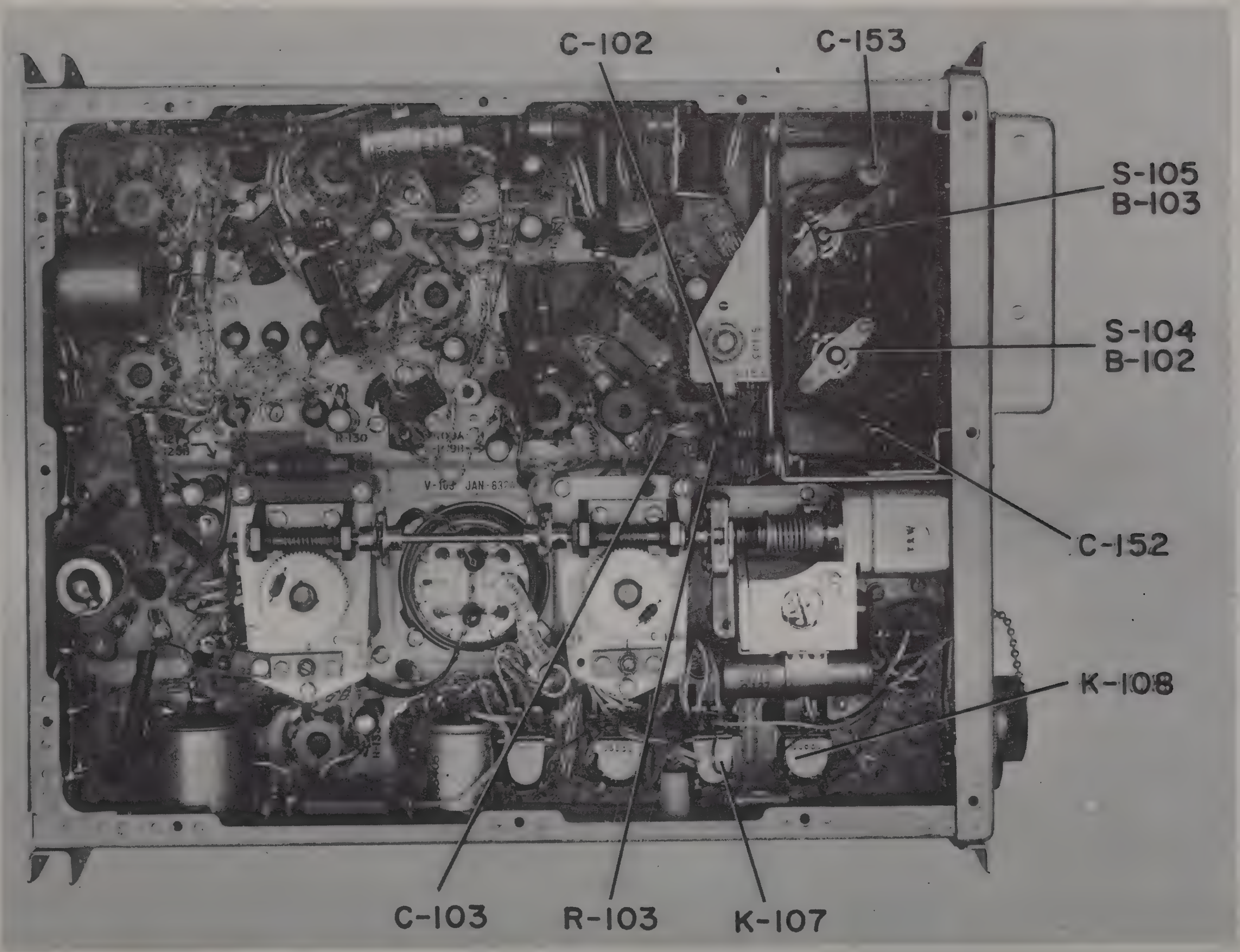

C-102
C-153
S-105
B-103
S-104
B-102
C-152
K-108
C-103
R-103
K-107

Figure 6-21. Radio Transmitter T-452/ARC-49—Bottom View, Cover Removed

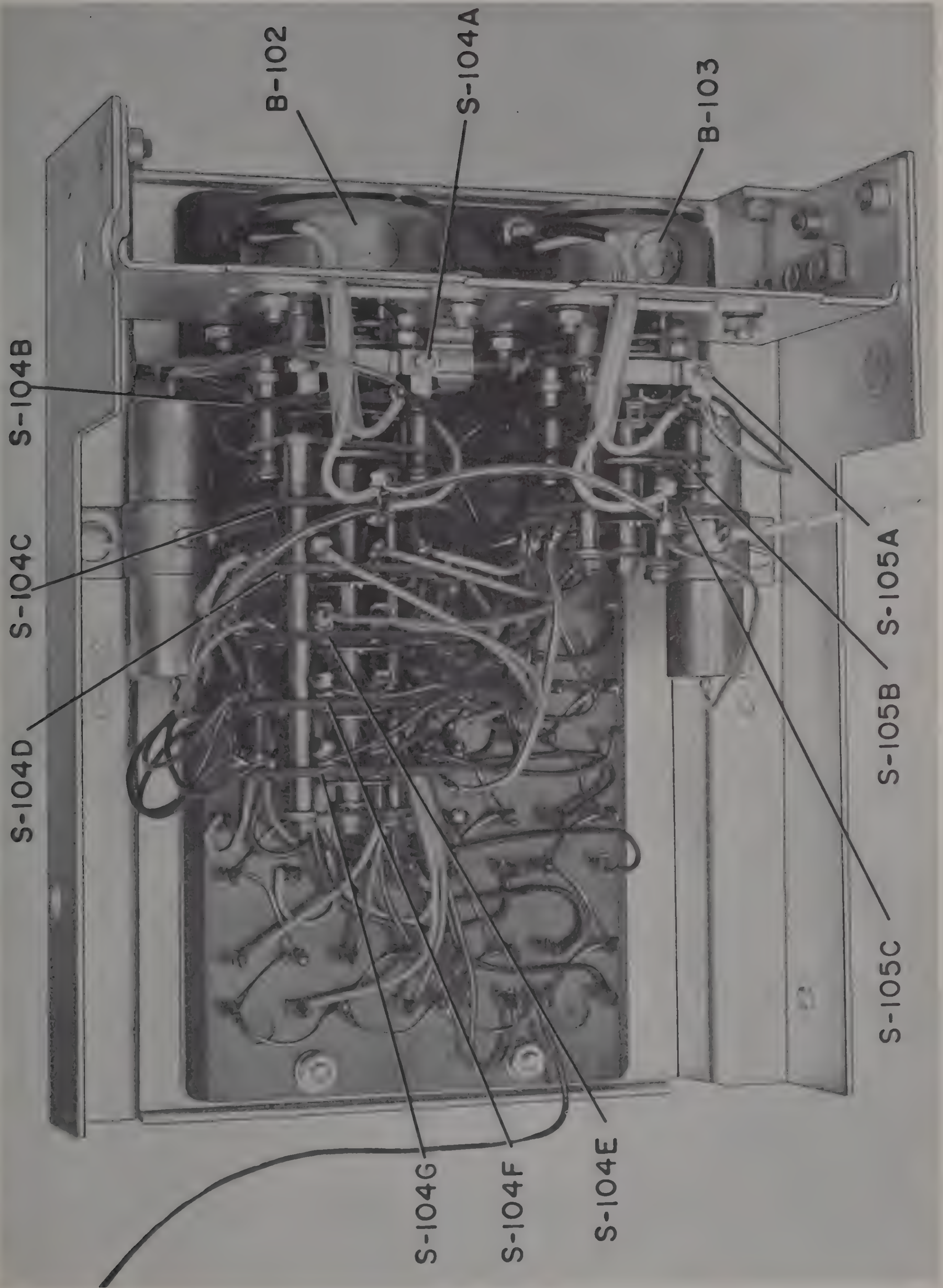

B-102
S-104A
B-103
S-104B
S-104C
S-104D
S-105A
S-105B
S-105C
S-104G
S-104F
S-104E

Figure 6-22. Radio Transmitter T-452/ARC-49—Front Panel Assembly, Rear View

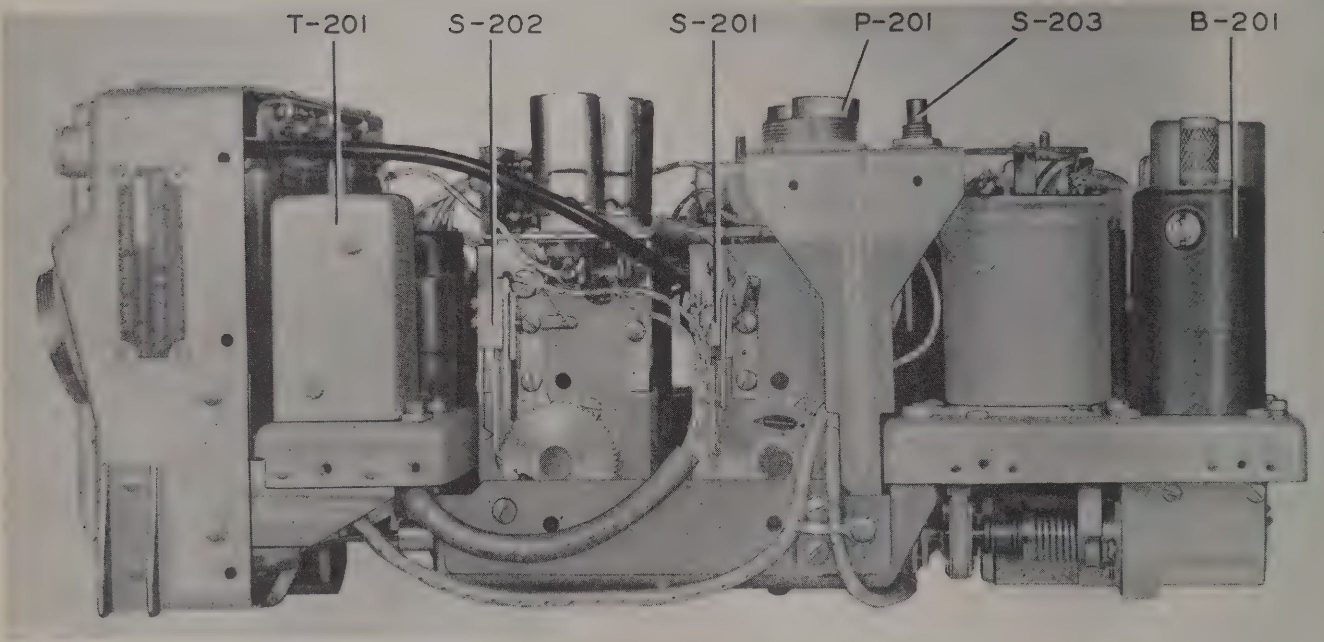

T-201
S-202
S-201
P-201
S-203
B-201

Figure 6-23. Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3—Right Side

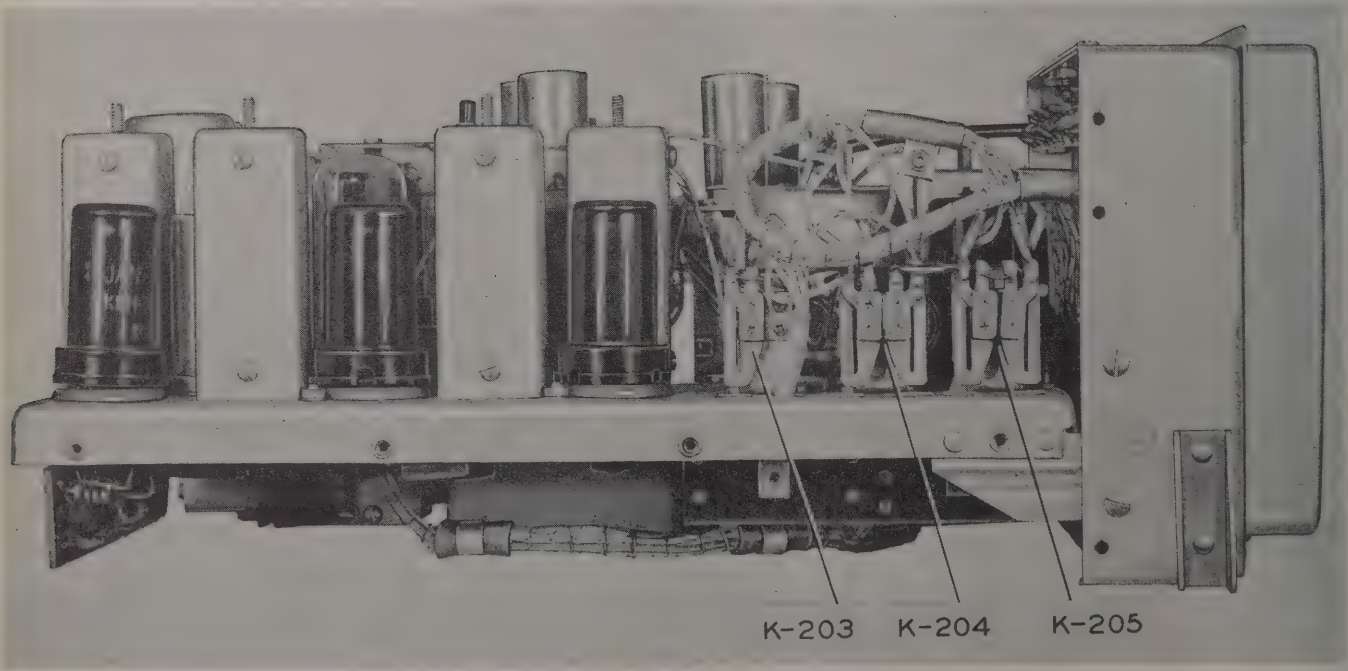

K-203
K-204
K-205

Figure 6-24. Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3—Left Side

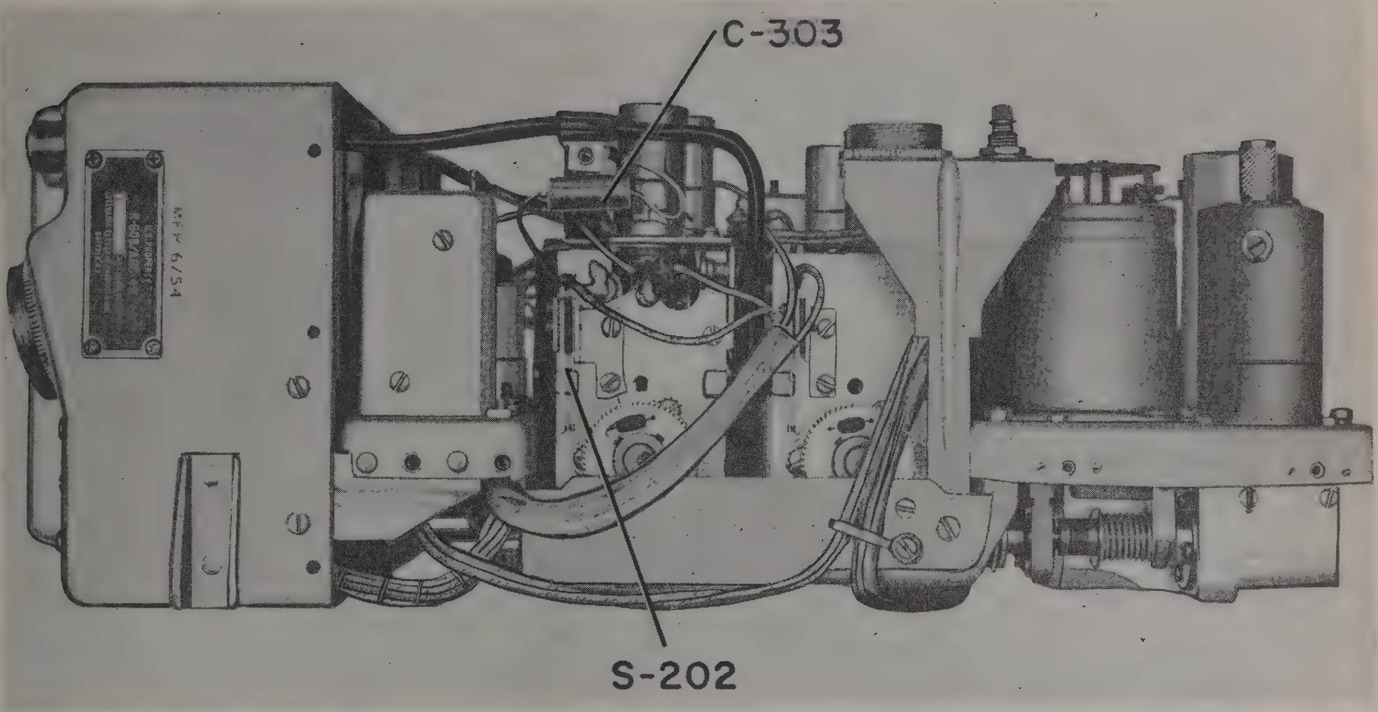


Figure 6-25. Radio Receiver R-608/ARC-49—Right Side

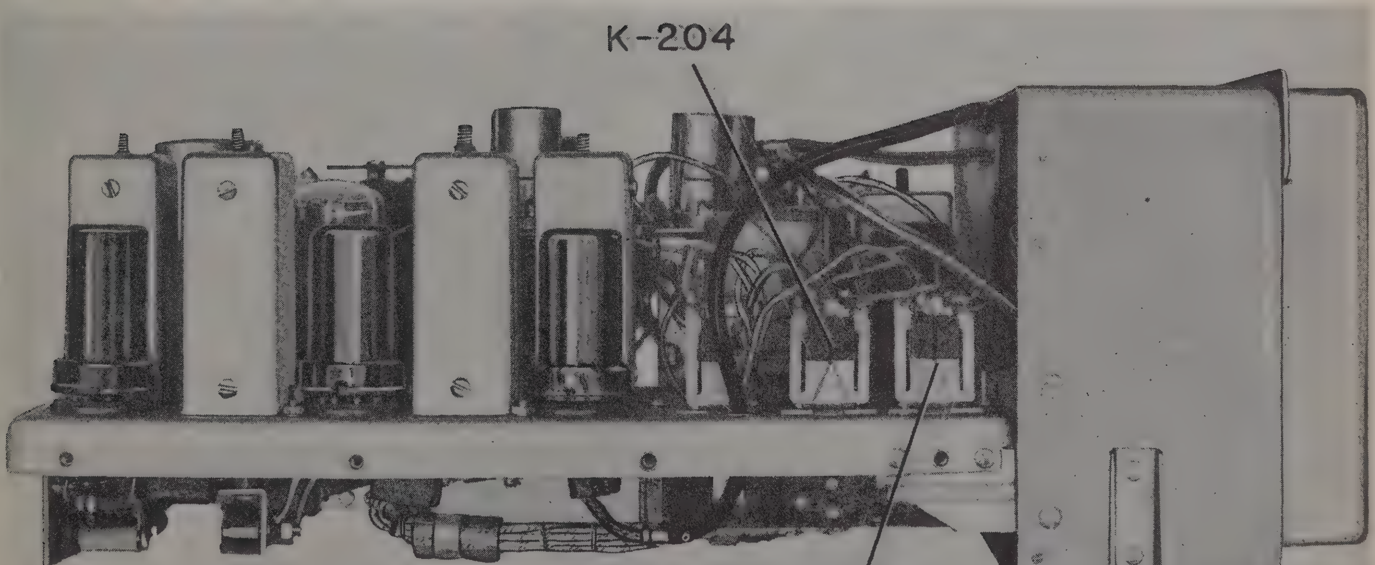


Figure 6-26. Radio Receiver R-608/ARC-49—Left Side

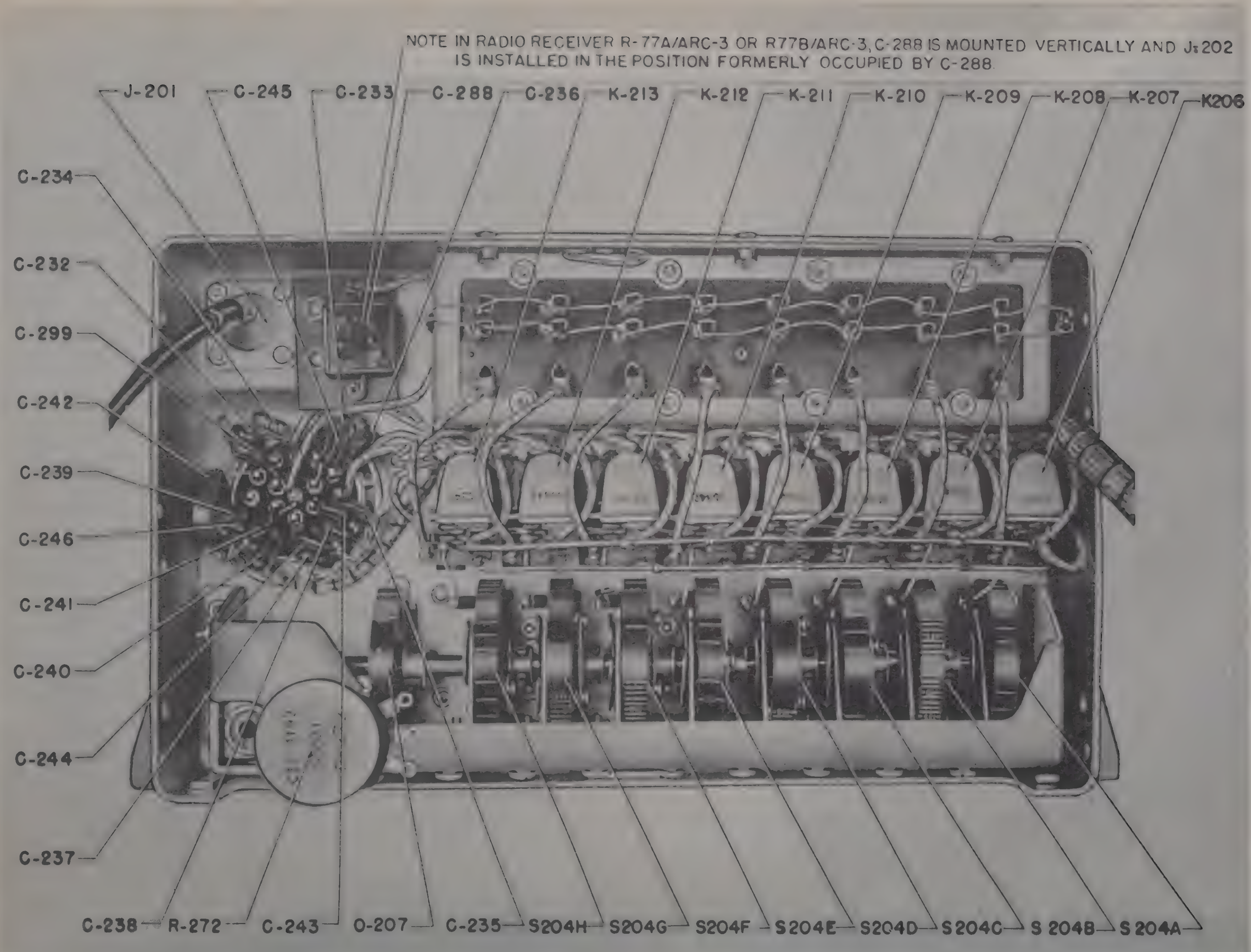

NOTE IN RADIO RECEIVER R-77A/ARC-3 OR R77B/ARC-3, C-288 IS MOUNTED VERTICALLY AND J-202 IS INSTALLED IN THE POSITION FORMERLY OCCUPIED BY C-288.
J-201
C-245
C-233
C-288
C-236
K-213
K-212
K-211
K-210
K-209
K-208
K-207
K206
C-234
C-232
C-299
C-242
C-239
C-246
C-241
C-240
C-244
C-237
C-238
R-272
C-243
O-207
C-235
S204H
S204G
S204F
S204E
S204D
S204C
S 204B
S 204A

Figure 6-27. Radio Receiver R-77/ARC-3—Rear View of Front Panel (with Note Applicable to Radio Receiver R-77A/ARC-3 or R-77B/ARC-3)

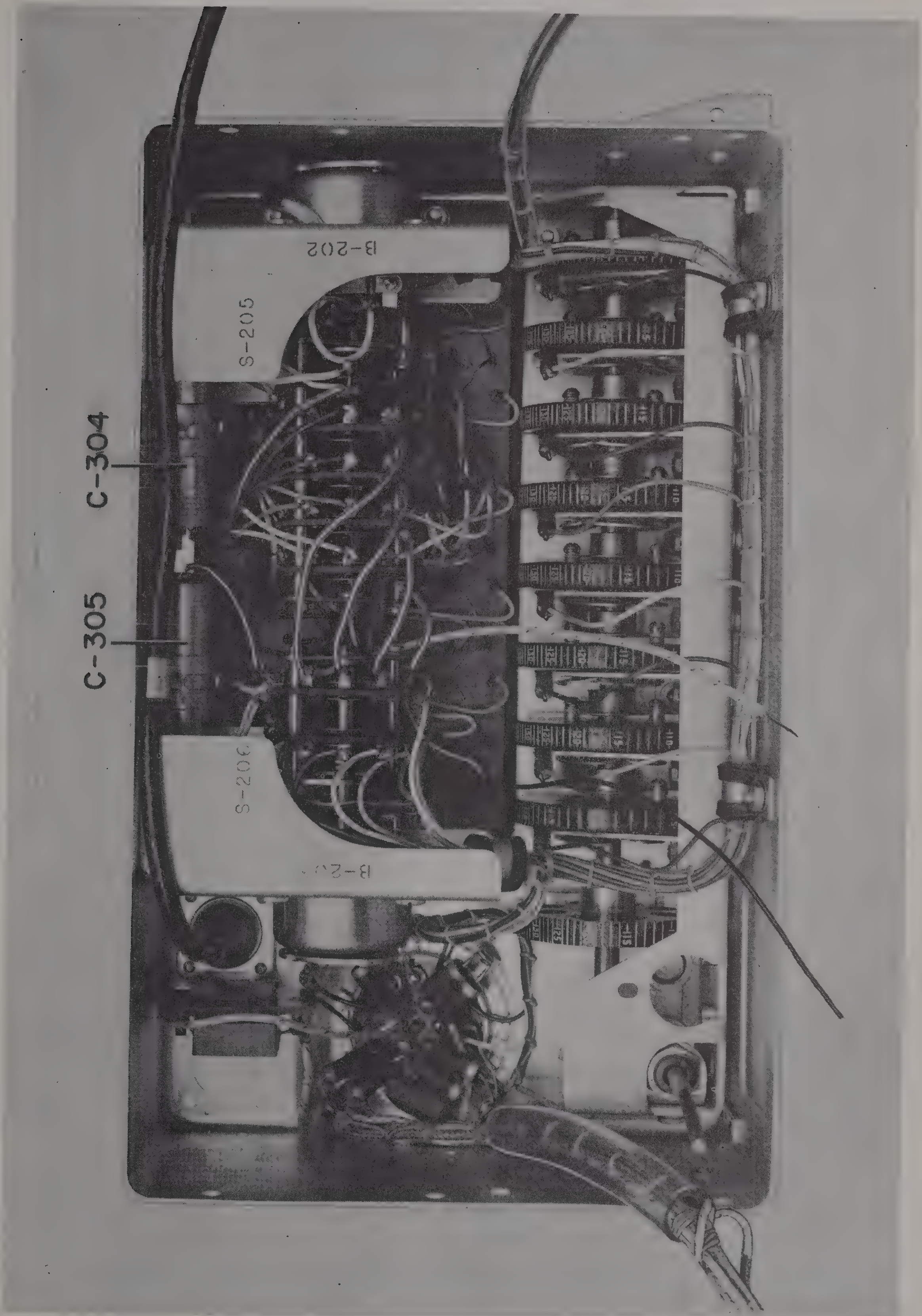
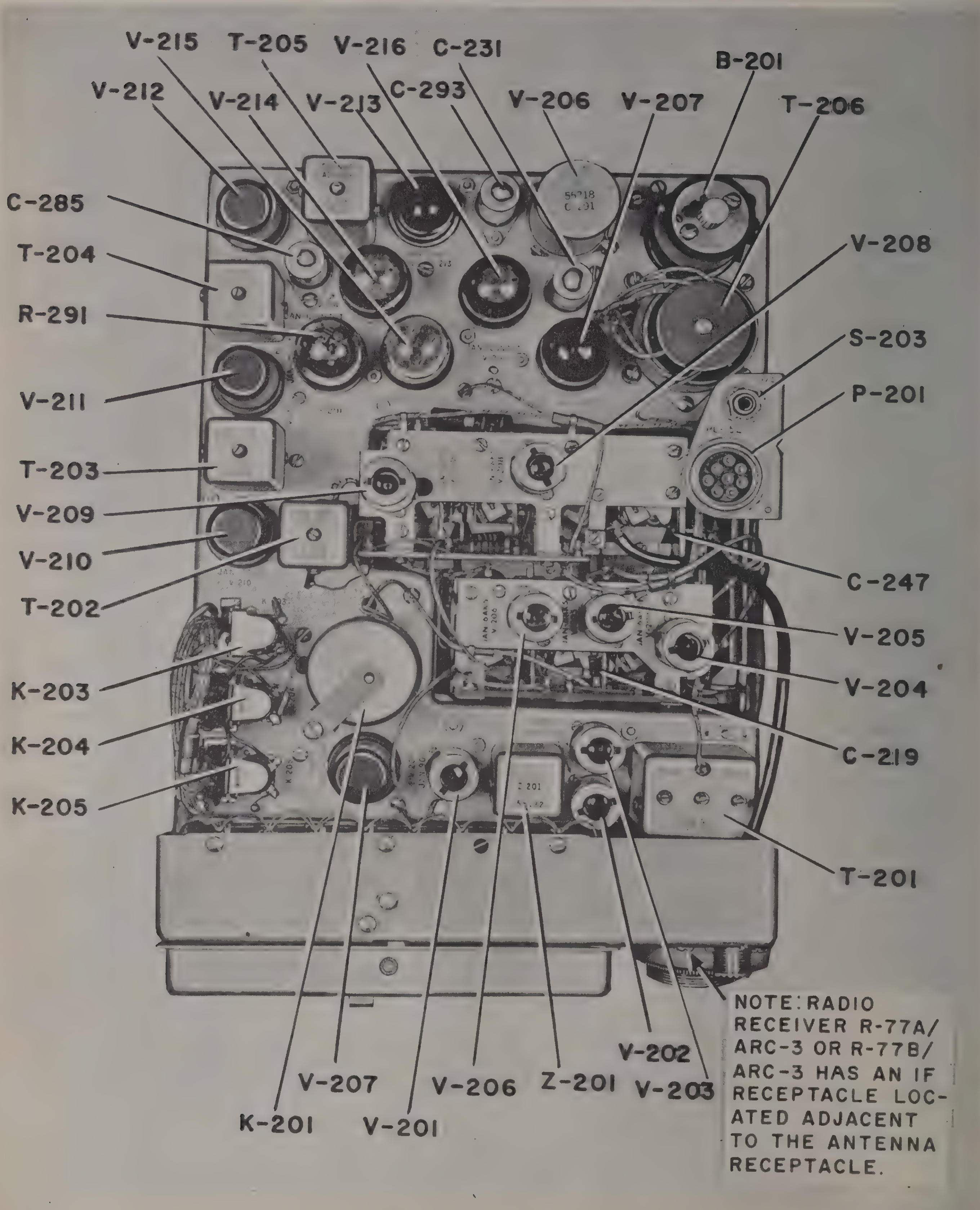

C-305
C-304
S-205
S-206
B-202

Figure 6-28. Radio Receiver R-608/ARC-49—Rear View of Front Panel


V-215
T-205
V-216
C-231
B-201
V-212
V-214
V-213
C-293
V-206
V-207
T-206
C-285
T-204
R-291
V-211
V-208
S-203
P-201
T-203
V-209
V-210
T-202
C-247
V-205
V-204
K-203
K-204
K-205
C-219
T-201
V-202
V-207
V-206
Z-201
V-203
K-201
V-201

NOTE: RADIO RECEIVER R-77A/ARC-3 OR R-77B/ARC-3 HAS AN IF RECEPTACLE LOCATED ADJACENT TO THE ANTENNA RECEPTACLE.

Figure 6-29. Radio Receiver R-77/ARC-3—Top View (with Note Applicable to Radio Receiver R-77A/ARC-3 or R-77B/ARC-3)

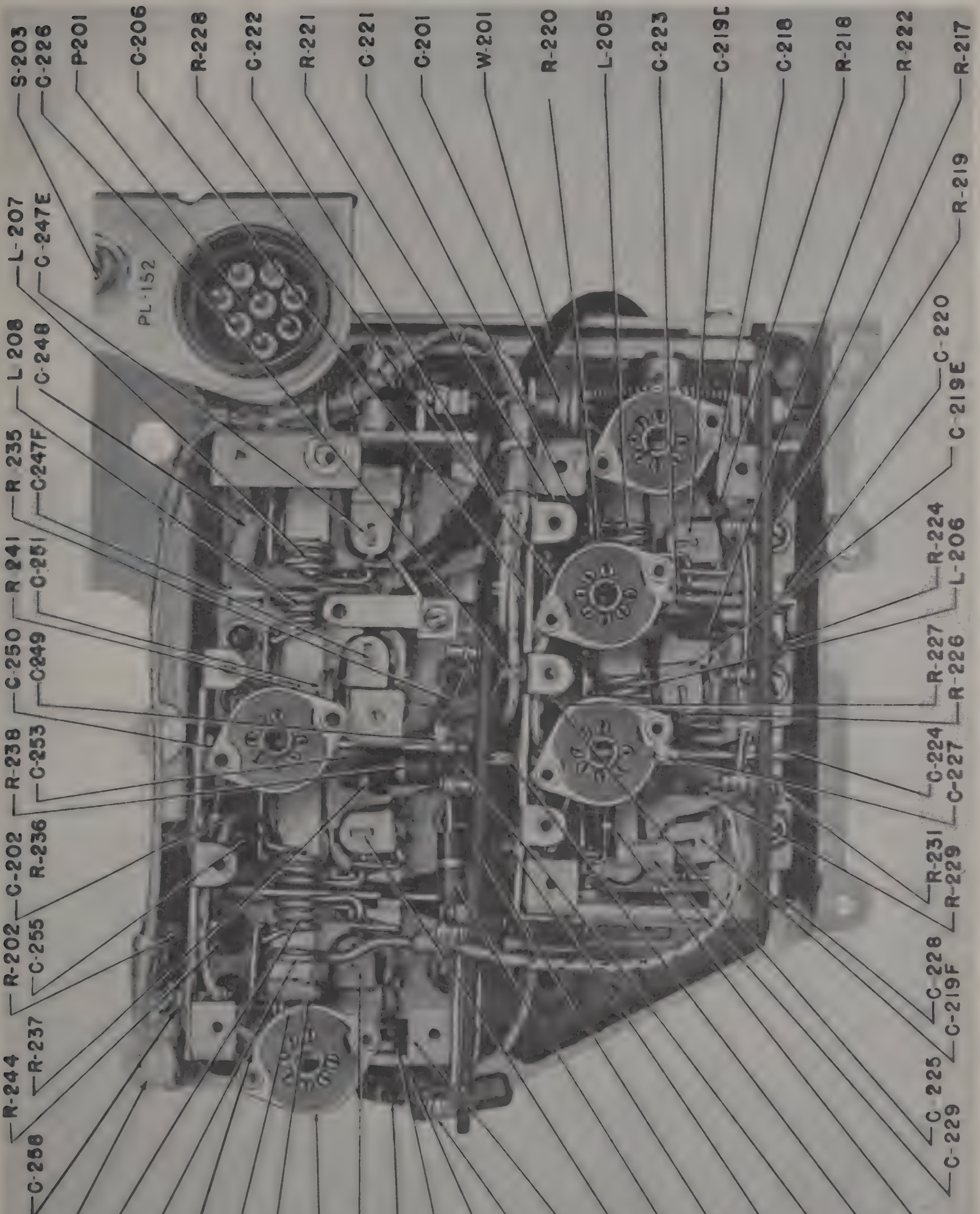

S-203
C-226
P-201
C-206
R-228
C-222
R-221
C-221
C-201
W-201
R-220
L-205
C-223
C-219D
C-218
R-218
R-222
R-217
R-219
C-220
C-219E
R-224
L-206
R-227
R-226
C-224
C-227
R-231
R-229
C-228
C-219F
C-225
C-229
L-207
C-247E
L 208
C-248
R 235
C-247F
R 241
C-251
C-250
C249
R-238
C-253
C-202
R-236
R-202
C-255
R-244
R-237
C-258
L-209
L-211
L-210
C-260
R-243
C-257
C-203
C247H
R-246
C-259
C-261
C-256
R-245
C-247G
R-239
R-242
C-204
C-254
C-205
R-230
PL-152

Figure 6-30. Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3—Tuning Assembly

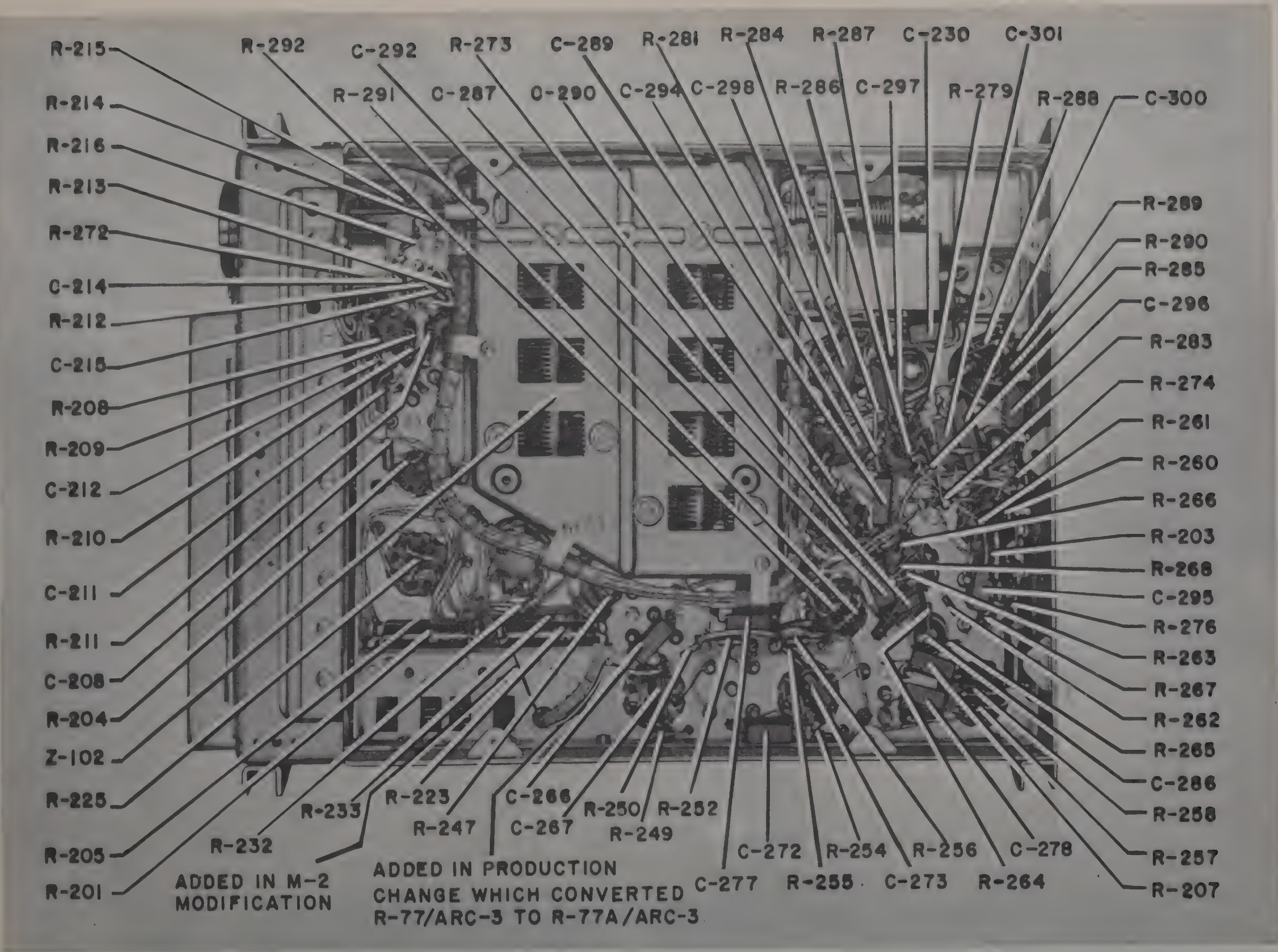

R-215
R-214
R-216
R-213
R-272
C-214
R-212
C-215
R-208
R-209
C-212
R-210
C-211
R-211
C-208
R-204
Z-102
R-225
R-205
R-201
R-292
C-292
R-273
C-289
R-281
R-284
R-287
C-230
C-301
R-291
C-287
C-290
C-294
C-298
R-286
C-297
R-279
R-288
C-300
R-289
R-290
R-285
C-296
R-283
R-274
R-261
R-260
R-266
R-203
R-268
C-295
R-276
R-263
R-267
R-262
R-265
C-286
R-258
R-257
R-207
R-232
R-233
R-223
R-247
C-266
C-267
R-250
R-249
R-252
C-272
C-277
R-254
R-255
C-273
R-256
R-264
C-278
ADDED IN M-2
MODIFICATION
ADDED IN PRODUCTION
CHANGE WHICH CONVERTED
R-77/ARC-3 TO R-77A/ARC-3

Figure 6-31. Radio Receiver R-77/ARC-3—Bottom View (with Notes Applicable to Radio Receiver R-77A/ARC-3 and M-2 Modification)

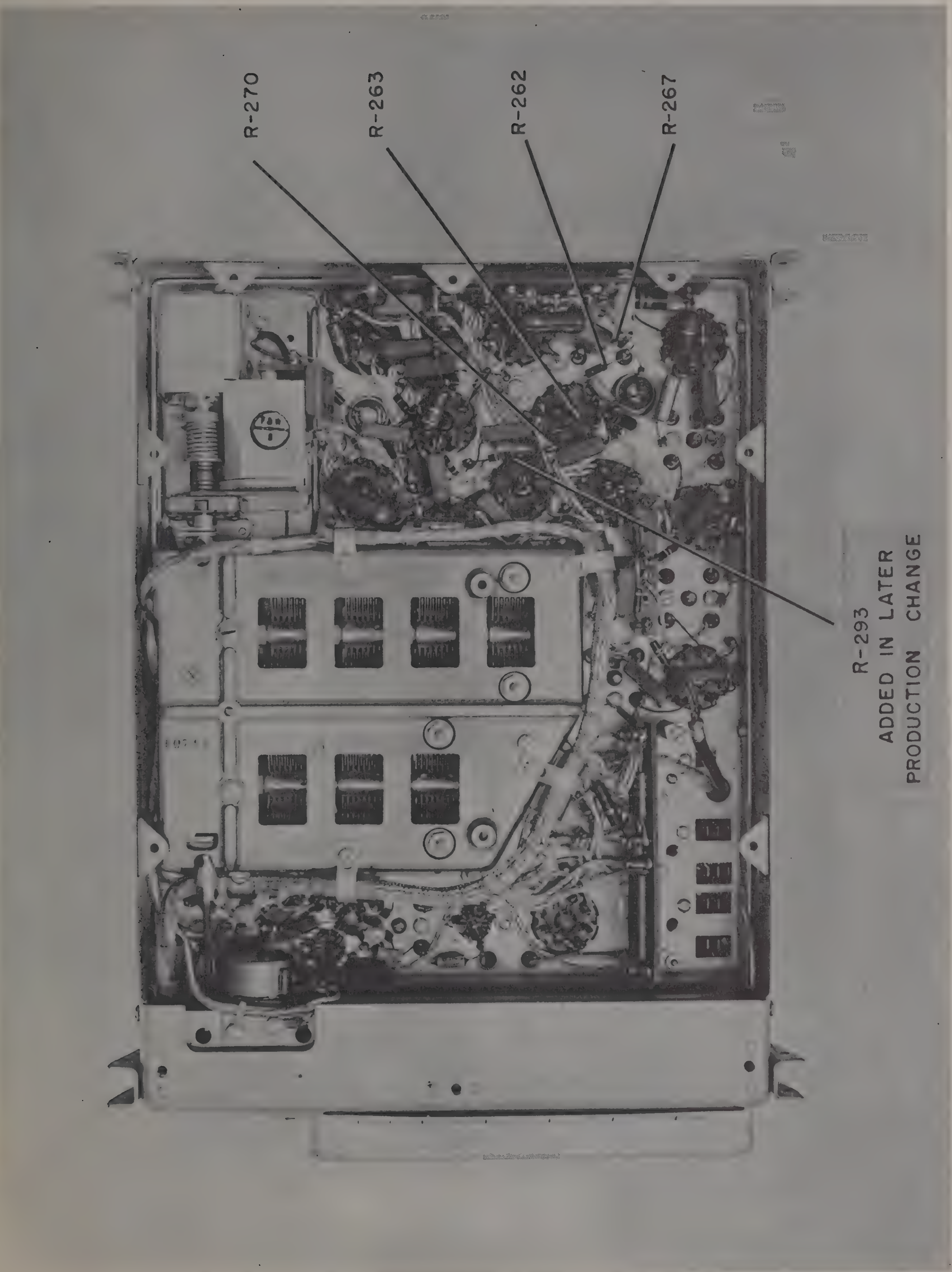

R-270
R-263
R-262
R-267
R-293
ADDED IN LATER
PRODUCTION CHANGE

Figure 6-32. Radio Receiver R-77B/ARC-3—Bottom View

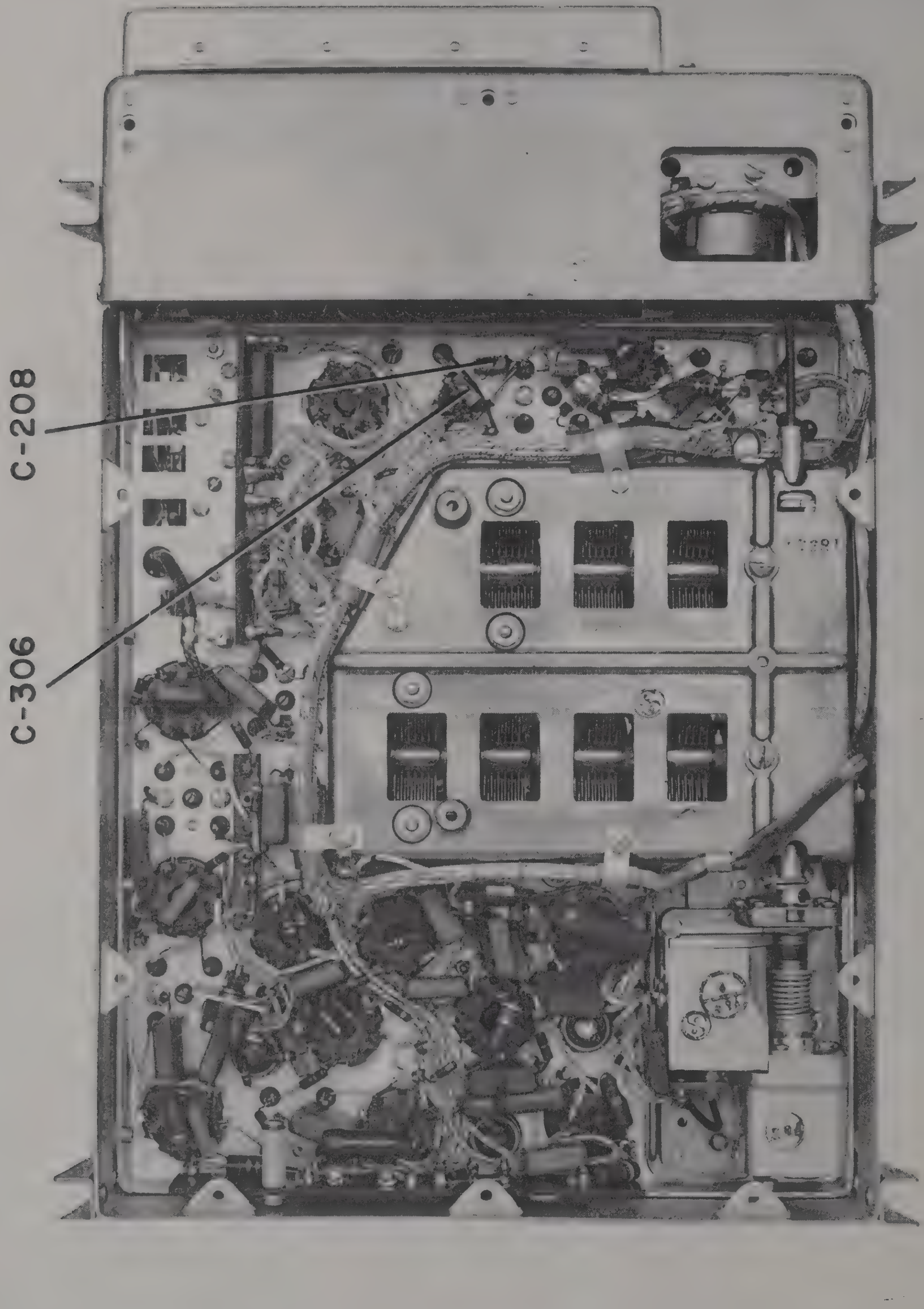
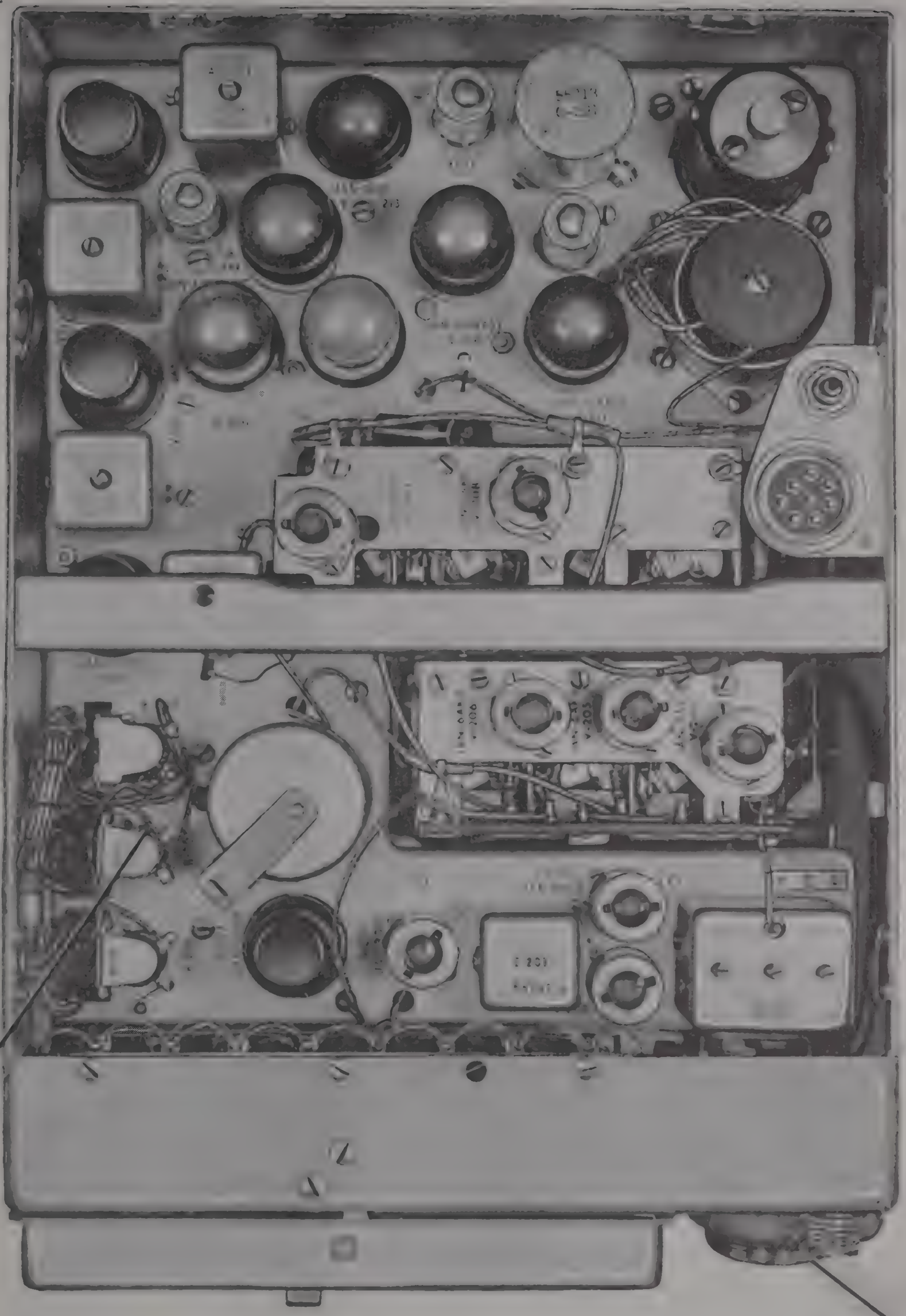


Figure 6-33. Radio Receiver R-608/ARC-49—Bottom View



NOTE: THIS WIRE WAS REMOVED IN M-2 MODIFICATION

NOTE: IN RADIO RECEIVER R-77A/ARC-3, AN IF RECEPTACLE HAS BEEN ADDED WHICH PROVIDES FOR USE OF A GUARD CHANNEL CONVERTER. A WIRE RUNS FROM THIS RECEPTACLE DOWN THROUGH THE CHASSIS BETWEEN K-203 AND SIDE OF CHASSIS.

Figure 6-34. Radio Receiver R-77/ARC-3—Top View, Case On (with Notes Applicable to Radio Receiver R-77A/ARC-3 and M-2 Modification)

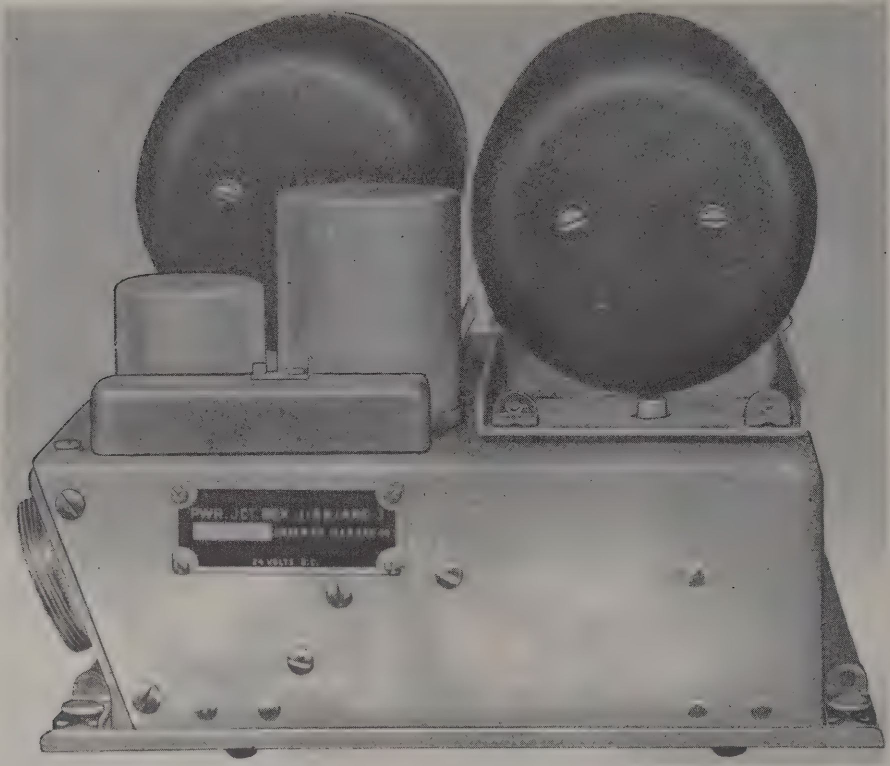


Figure 6-35. Power Junction Box J-68/ARC-3—Right Side

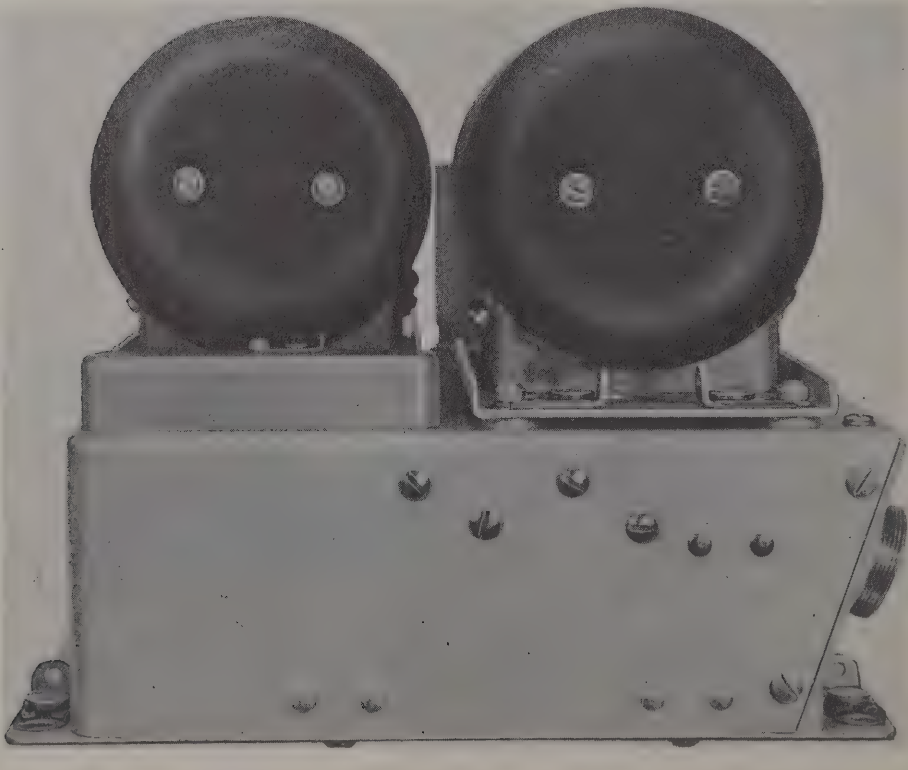


Figure 6-36. Power Junction Box J-68/ARC-3—Left Side

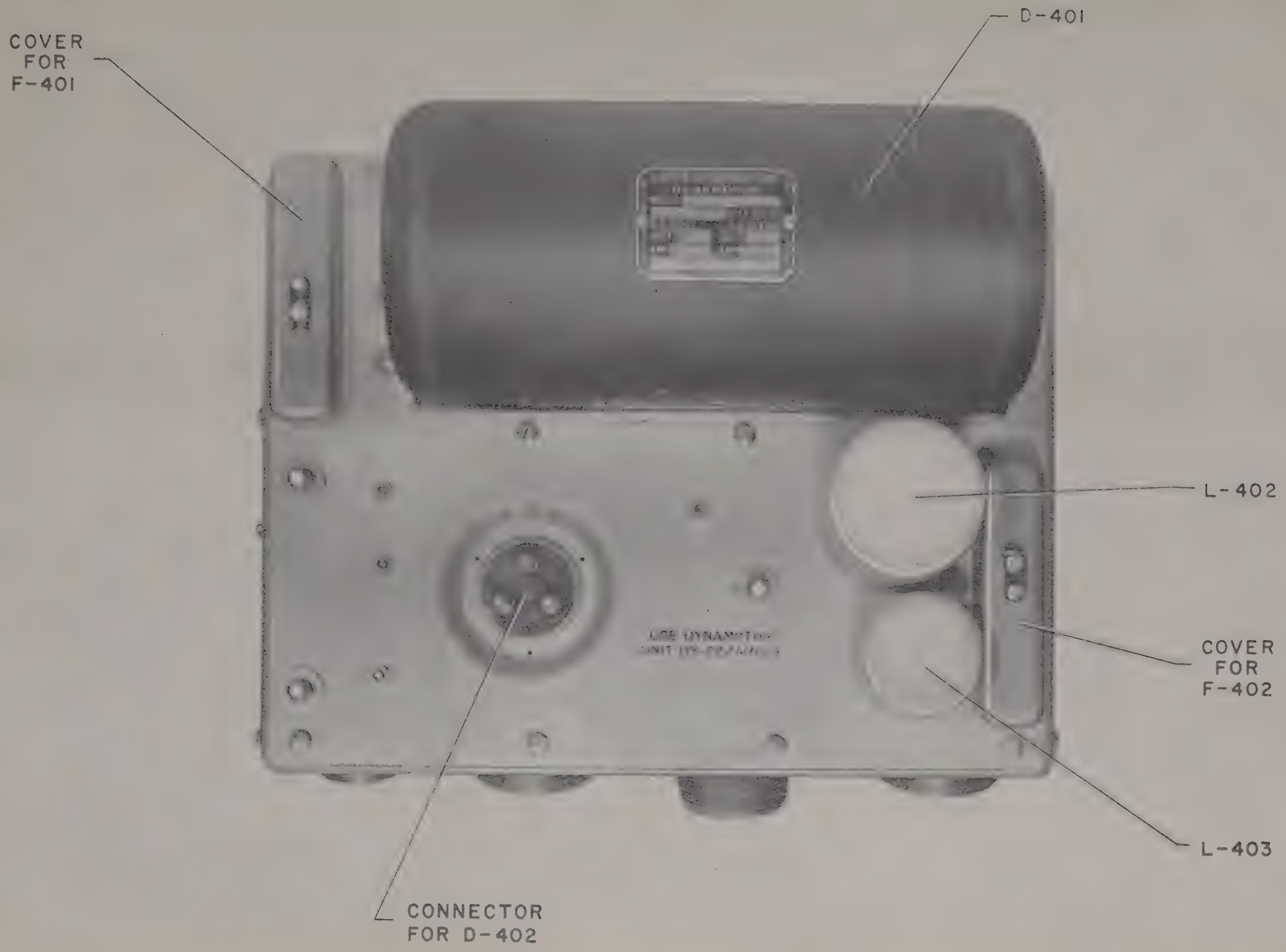

COVER FOR F-401
D-401
L-402
COVER FOR F-402
L-403
CONNECTOR FOR D-402

Figure 6-37. Power Junction Box J-68/ARC-3—Top View with Dynamotor Unit DY-22/ARC-3 Removed

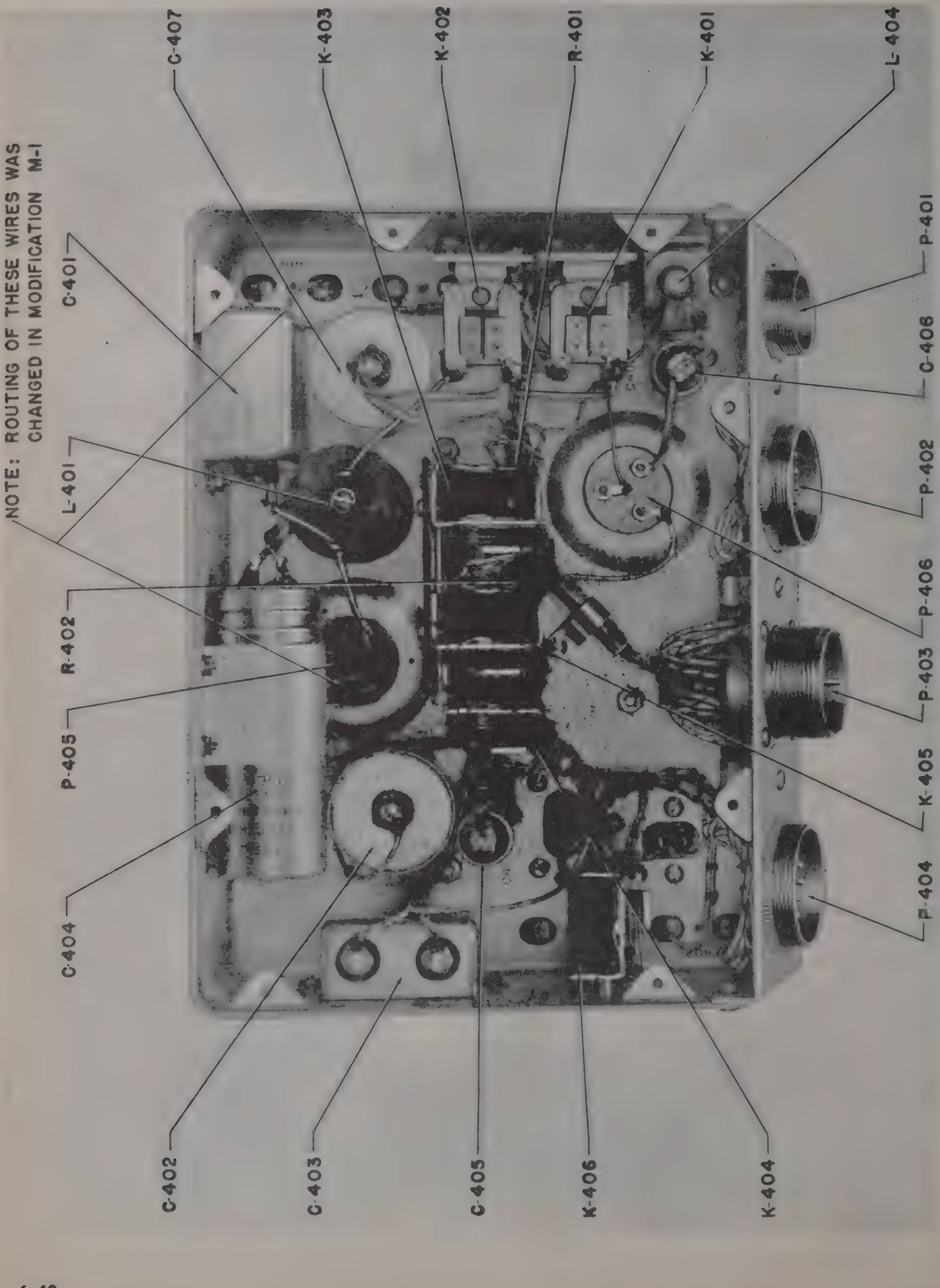

NOTE: ROUTING OF THESE WIRES WAS CHANGED IN MODIFICATION M-1
C-407
K-403
K-402
R-401
K-401
L-404
C-401
L-401
R-402
P-405
C-404
C-402
C-403
C-405
K-406
K-404
P-401
C-406
P-402
P-406
P-403
K-405
P-404

Figure 6-38. Power Junction Box J-68/ARC-3—Bottom View (with Note Applicable to Modification M-1)

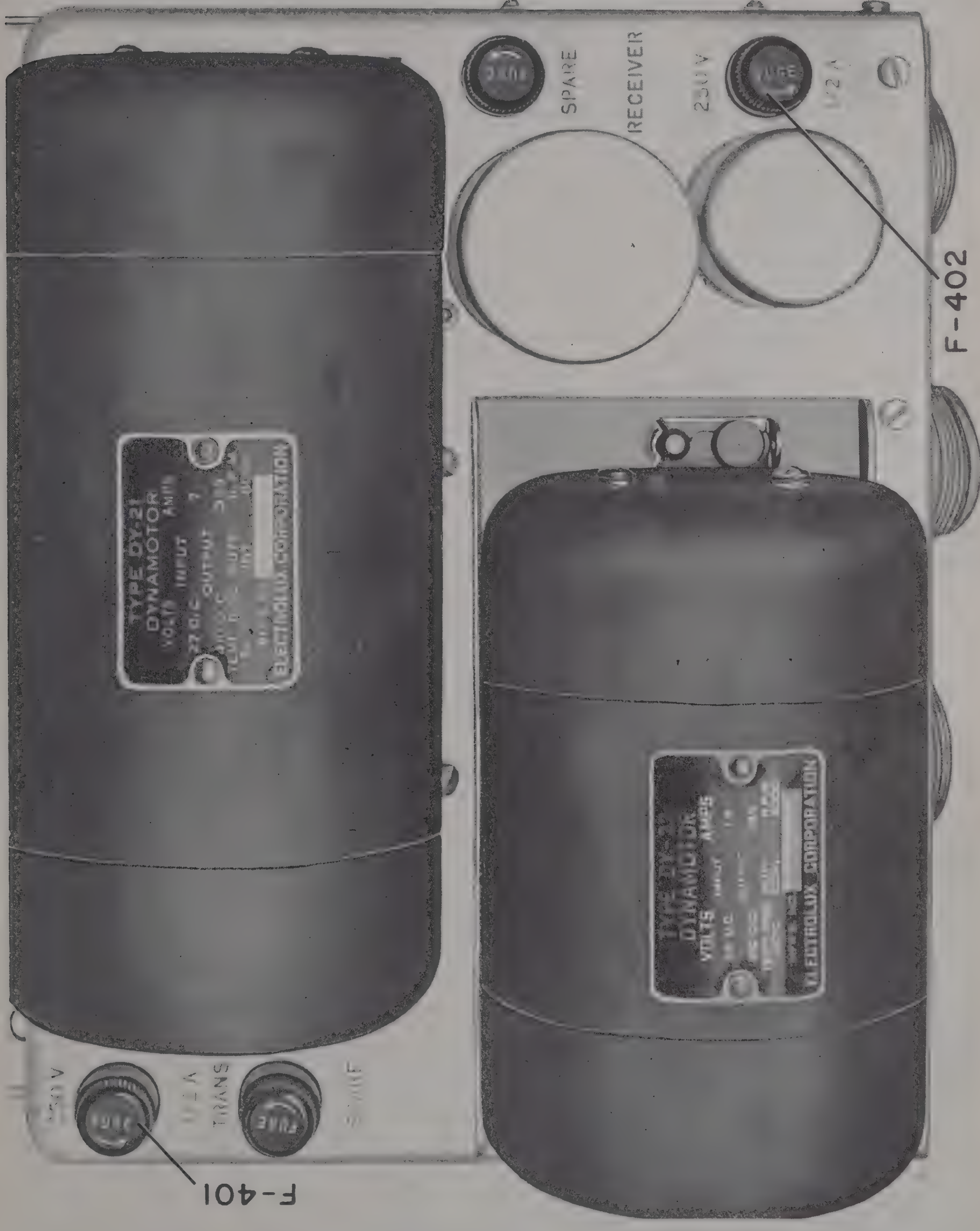

SPARE
RECEIVER
250 V
1/2 A
F-402
TYPE DY-21
DYNAMOTOR
VOLTS INPUT AMPS
ELECTROLUX CORPORATION
DYNAMOTOR
ELECTROLUX CORPORATION
TRANS
F-401

Figure 6-39. Power Junction Box J-68A/ARC-3—Top View

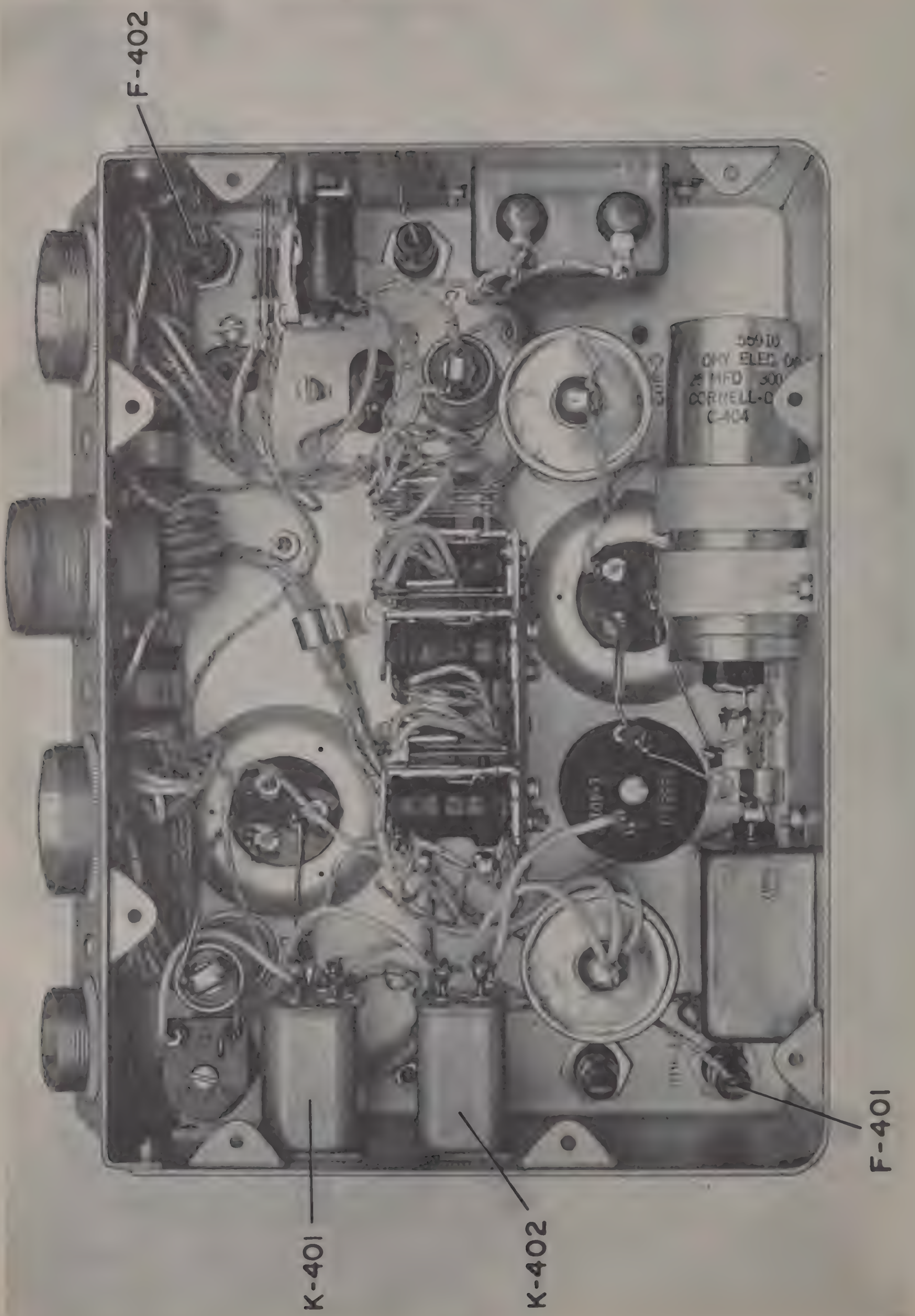

F-402
F-401
K-401
K-402

Figure 6-40. Power Junction Box J-68A/ARC-3—Bottom View, Cover Removed

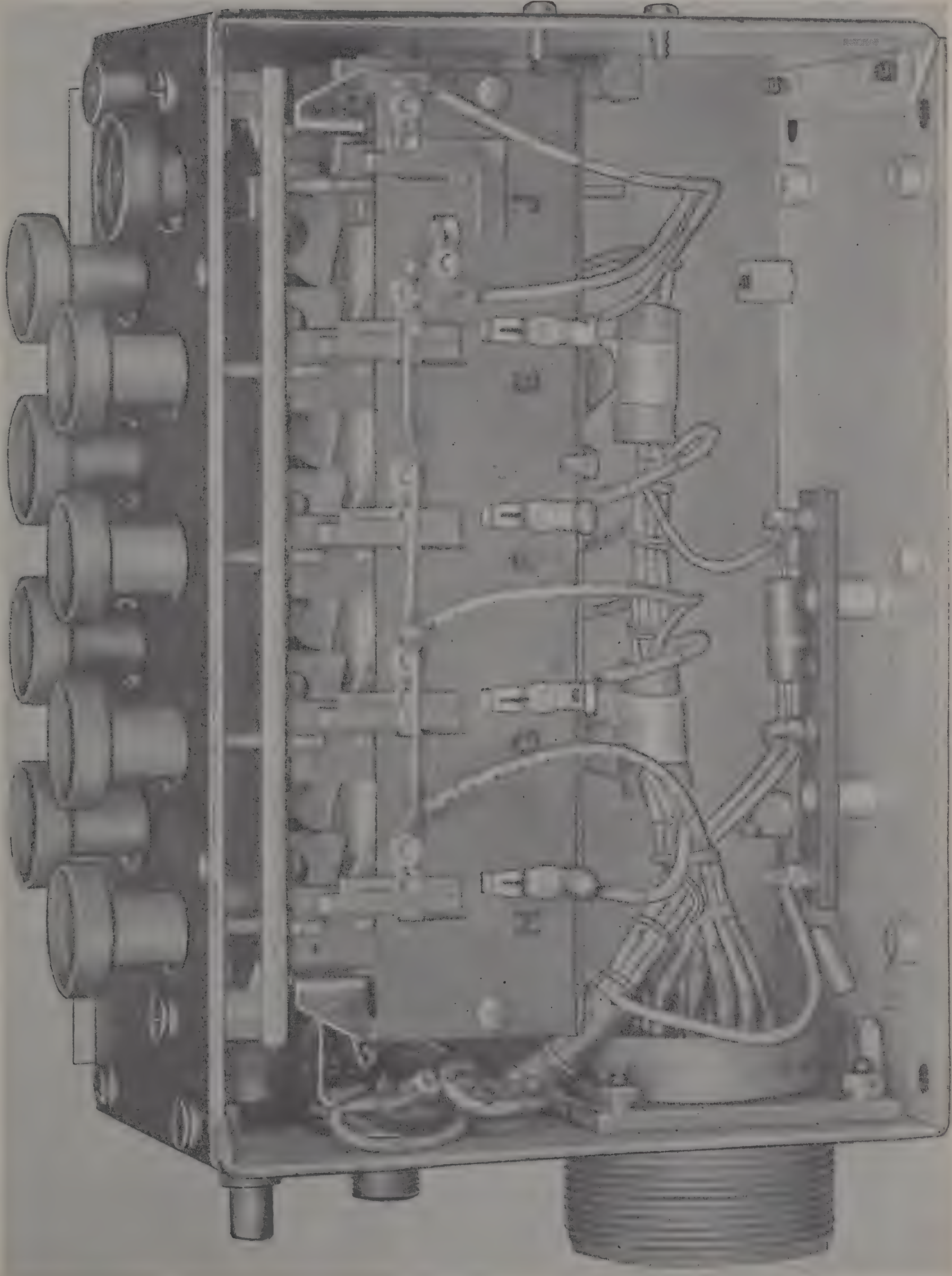


Figure 6-41. Control Box C-118/ARC-3—Side Cover Removed

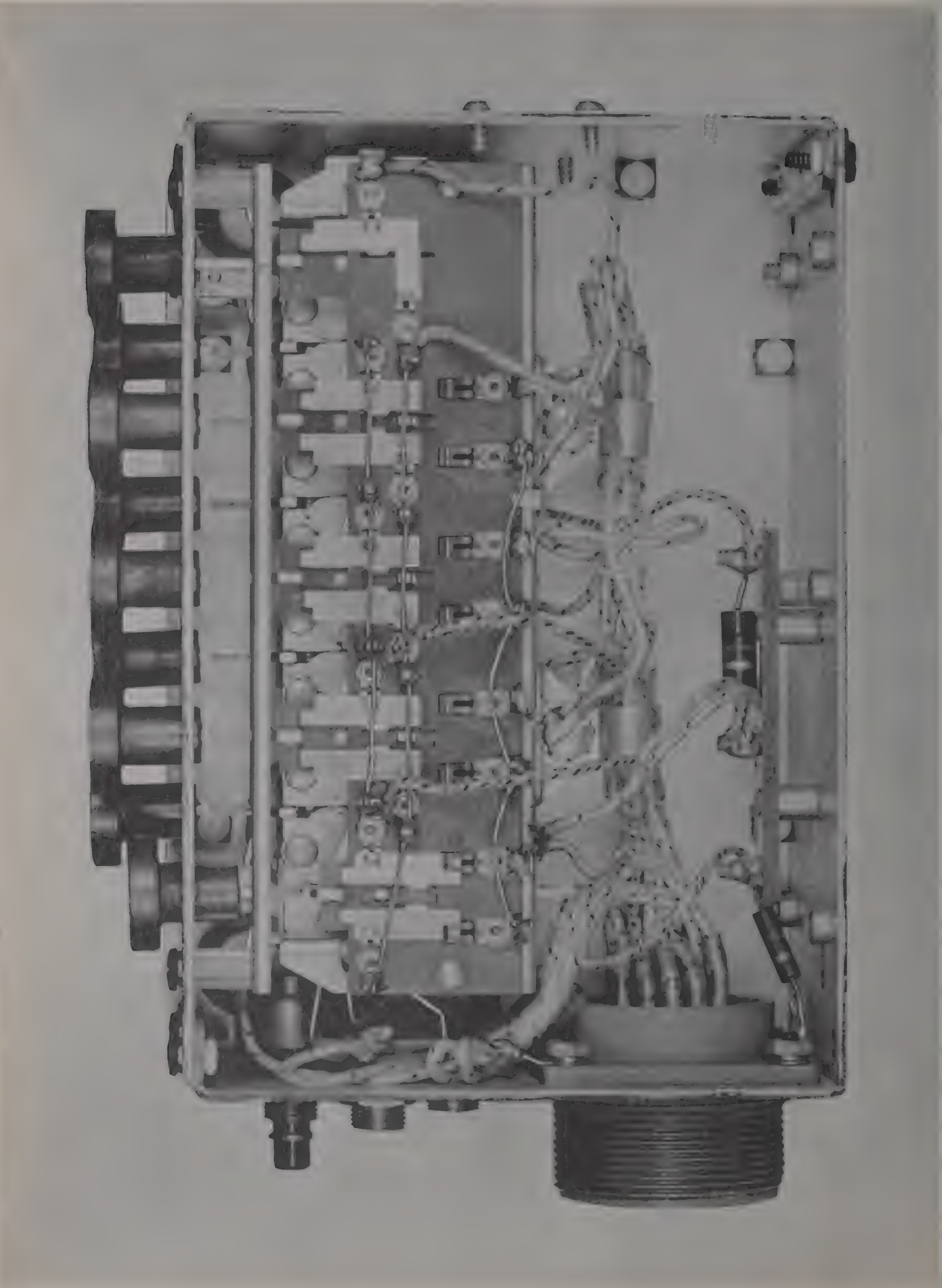


Figure 6-42. Control Box C-118A/ARC-3 (C-118/ARC-3 Modified by Installation of New Type Switch Assembly)—Interior View

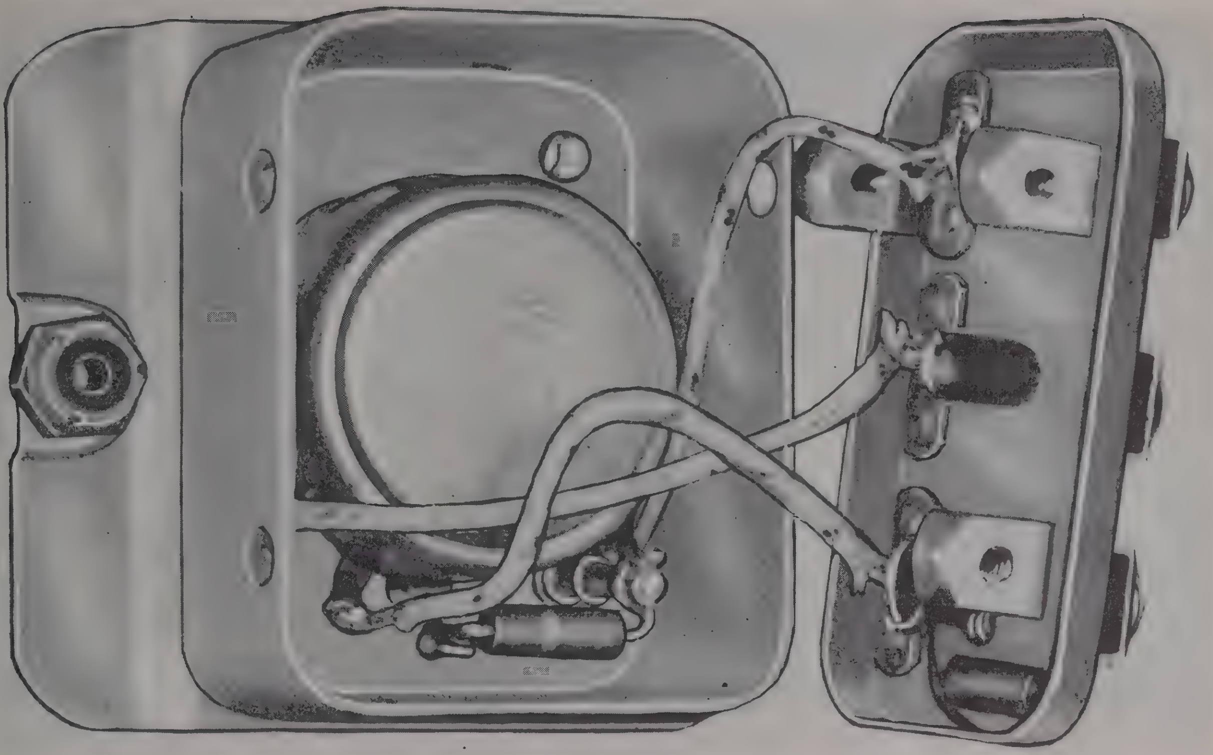


Figure 6-43. Control Unit C-197/ARC-3—Back Removed

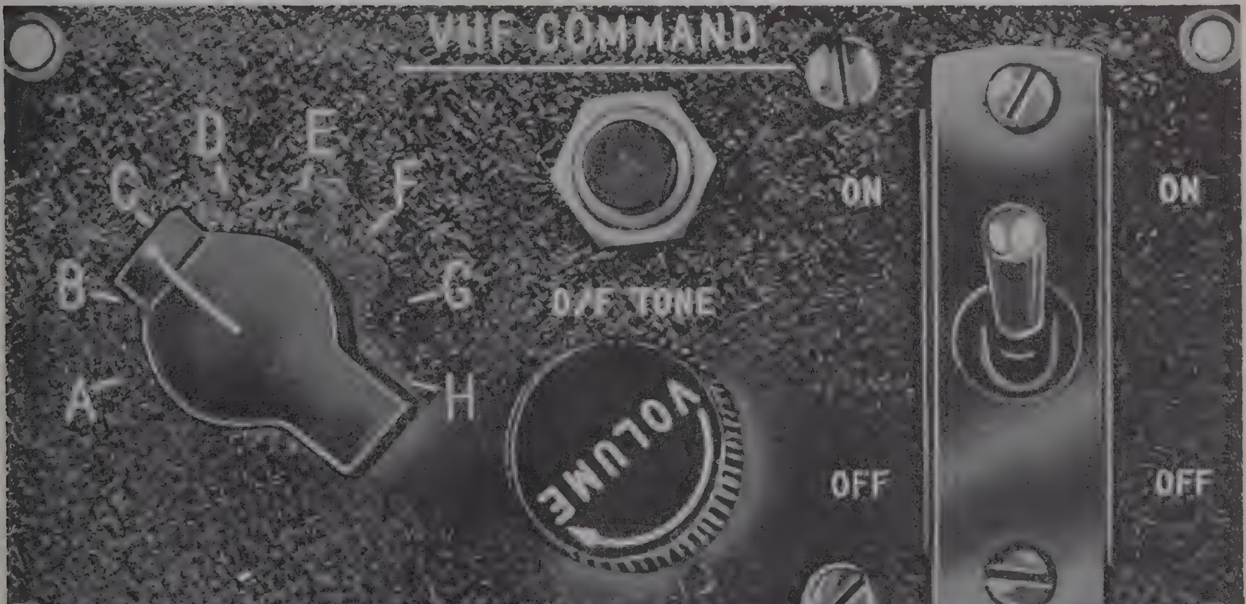

VHF COMMAND
A
B
C
D
E
F
G
H
D/F TONE
VOLUME
ON
OFF
ON
OFF
C-404/A

Figure 6-44. Control Panel C-404/A—Front View

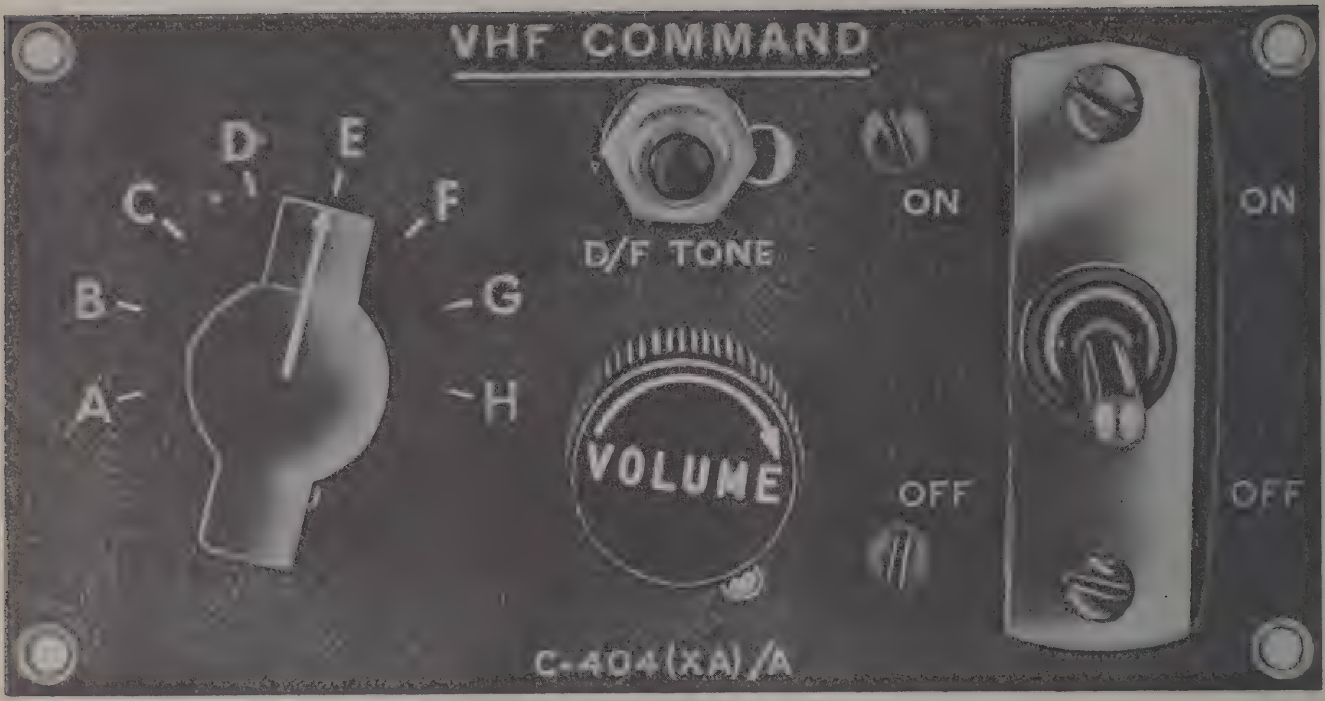

VHF COMMAND
A
B
C
D
E
F
G
H
D/F TONE
VOLUME
ON
OFF
ON
OFF
C-404(XA)/A

Figure 6-45. Control Panel C-404(XA)/A—Front View

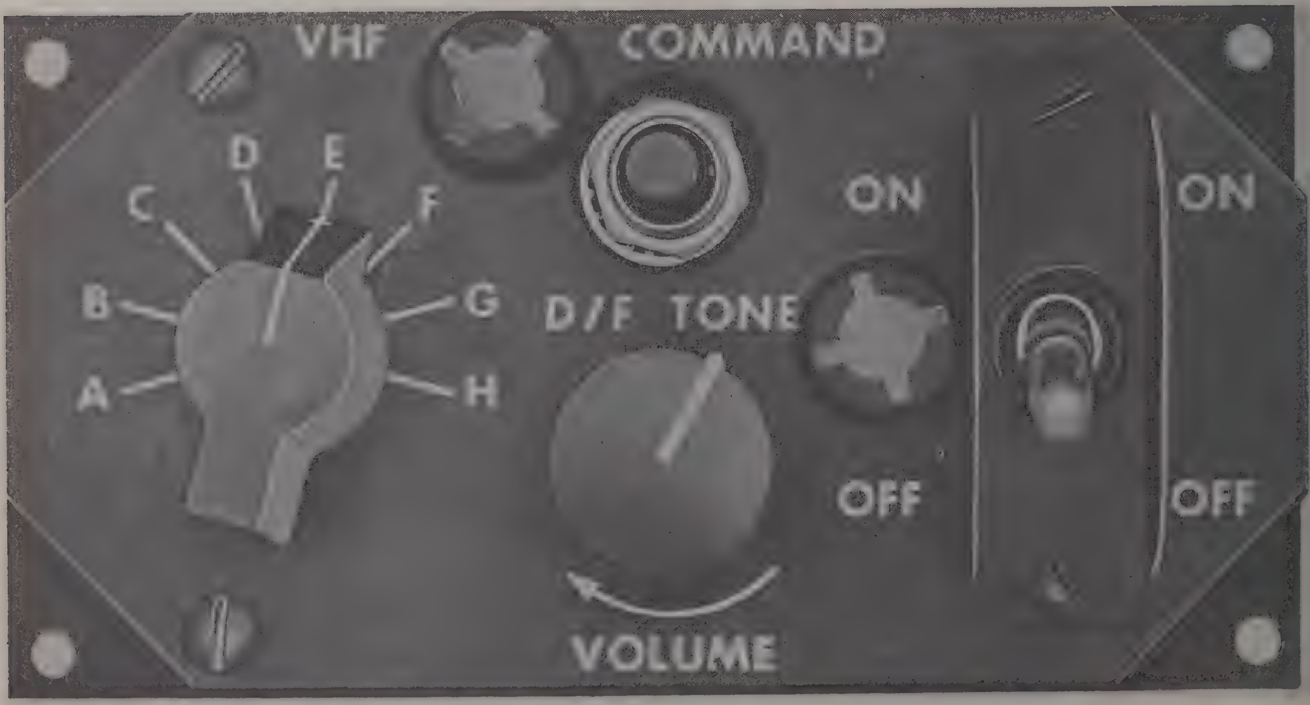

VHF
COMMAND
A
B
C
D
E
F
G
H
D/F TONE
VOLUME
ON
OFF
ON
OFF

Figure 6-46. Control Panel C-404A/A—Front View

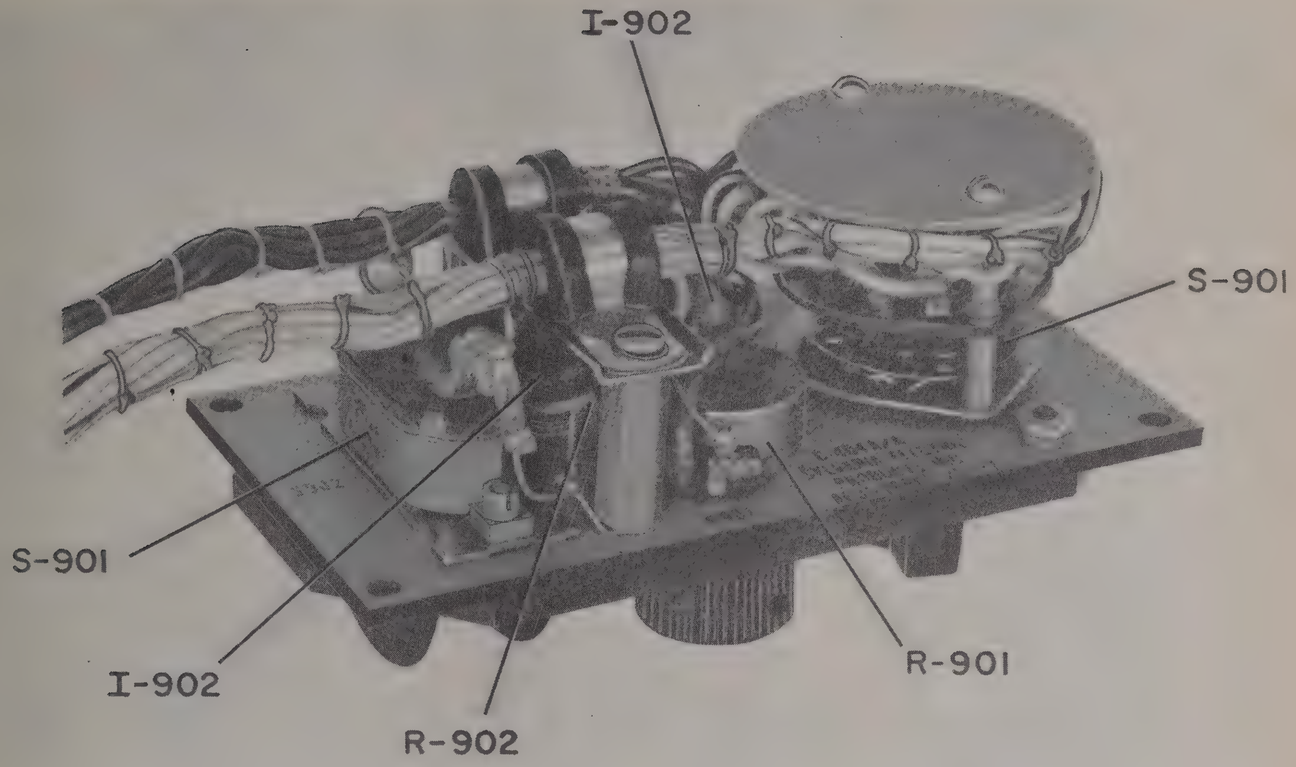

I-902
S-901
S-901
I-902
R-902
R-901

Figure 6-47. Control Panel C-404A/A—Rear Diagonal View

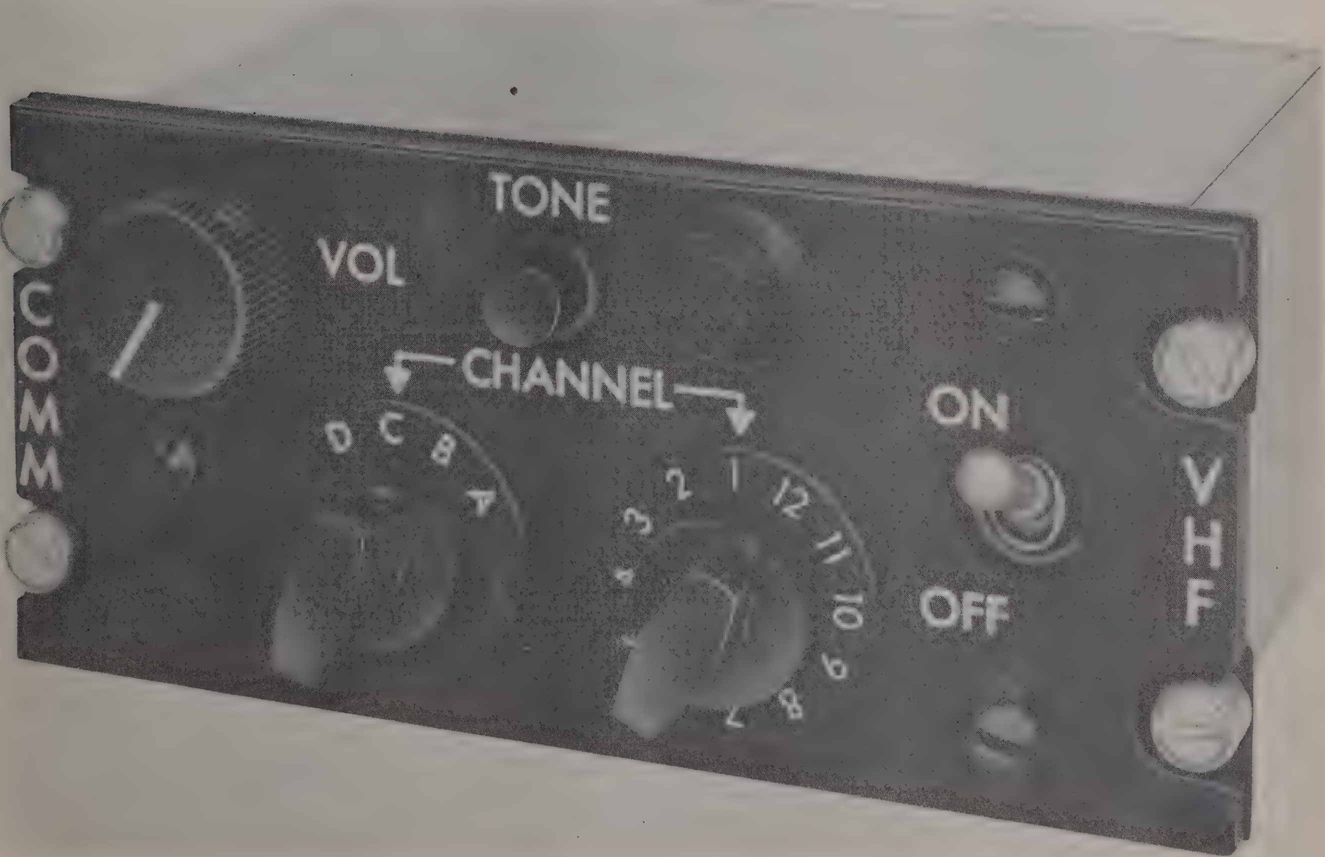

TONE
VOL
COMM
CHANNEL
D C B A
1 2 3 4 7 8 9 10 11 12
ON
OFF
VHF

Figure 6-48. Control, Radio Set C-1400/ARC-49—Front View

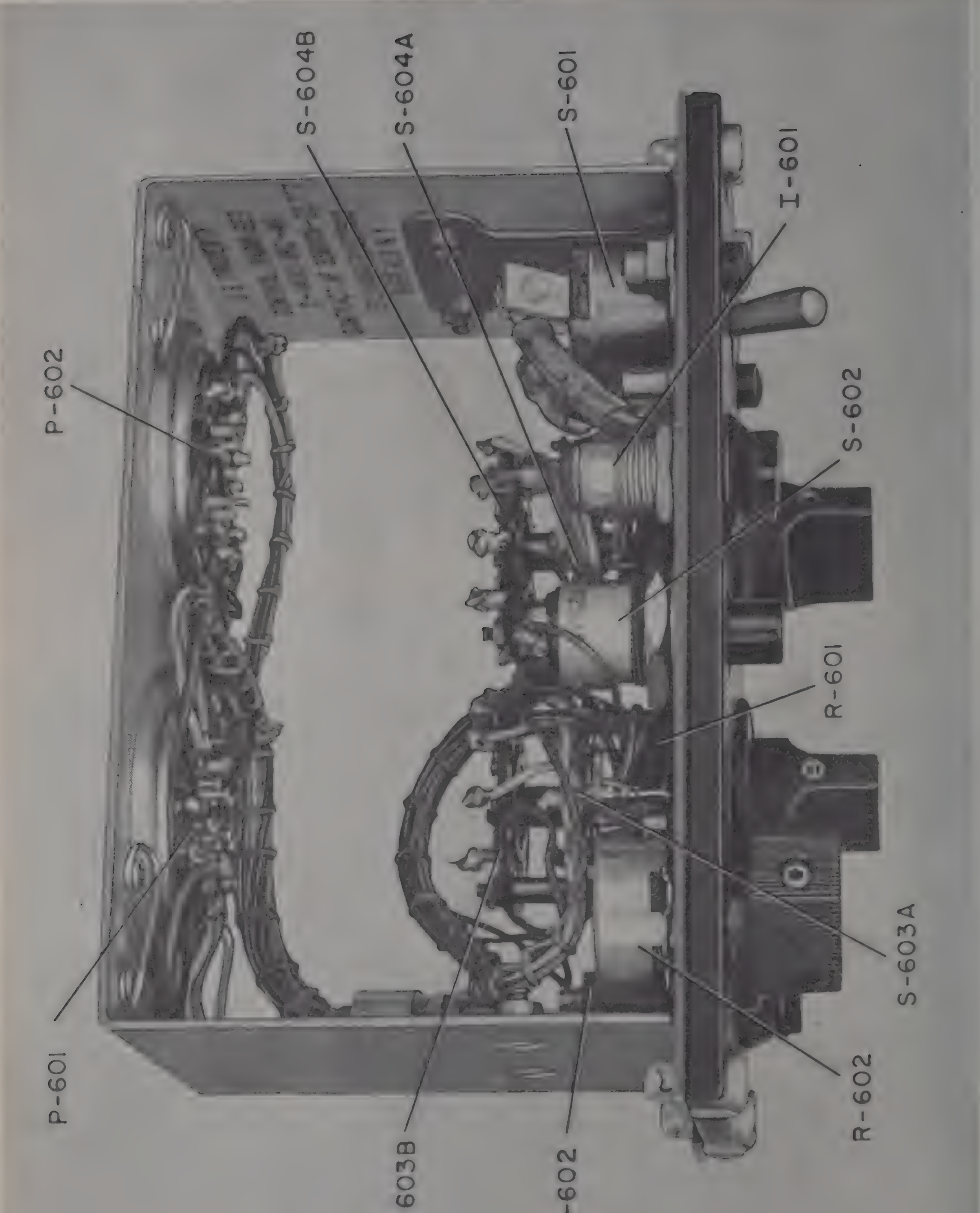
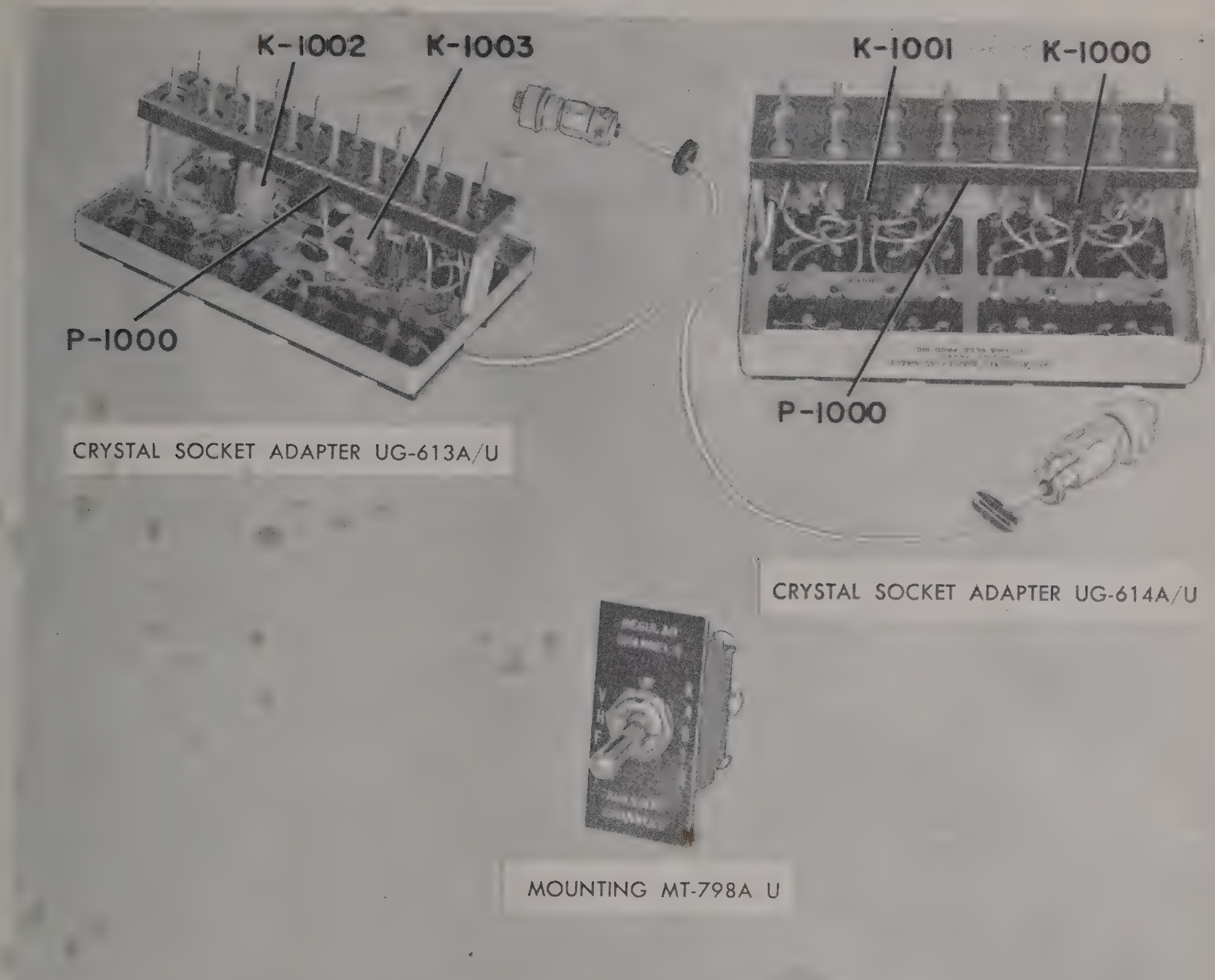

S-604B
S-604A
S-601
I-601
S-602
R-601
S-603A
R-602
P-602
P-601
S-603B
I-602

Figure 6-49. Control, Radio Set C-1400/ARC-49—Top View with Case Removed


K-1002
K-1003
P-1000
K-1001
K-1000
P-1000

CRYSTAL SOCKET ADAPTER UG-613A/U

CRYSTAL SOCKET ADAPTER UG-614A/U

MOUNTING MT-798A U

COVER CW-220A/U

COVER CW-221A/U

Figure 6-50. Modification Kit MX-1131A/ARC-3 (with Rear View of Crystal Socket Adapter Units)

SECTION VII

TABLE OF REPLACEABLE PARTS

1. CONTENT AND ARRANGEMENT OF TABLE.

a. Listings in the Table of Replaceable Parts do not constitute a complete breakdown of the equipment but consist of all electrical and such mechanical parts, with the exception of structural and minor parts such as standard bolts, screws, nuts, etc., that are subject to loss or failure.

b. Parts are grouped by major assemblies. Under each major assembly they are listed (1) alphabetically according to type and (2) numerically under each type.

2. ORDERING SPARE PARTS.

a. GENERAL.—Each Service using the Table of Replaceable Parts has established certain depots and groups for the storage and issue of spare parts. The regulations of each Service should be studied to determine the method of requisitioning spare parts and the sources from which they may be obtained. Information in the table pertaining to manufacturers' or contractors' names, types, models, or drawing numbers is not to be interpreted as authorization to field agencies to attempt to purchase identical or comparable spare parts directly from wholesale or retail stores except under emergency conditions as covered by existing regulations of the Service concerned.

b. U. S. ARMY PERSONNEL.—The Table of Replaceable Parts is to be used for obtaining information *only* and is not to be construed as a list of allowances of maintenance parts or components. Using organizations using this equipment will consult applicable AAF Technical Orders of the 00-30 series. Higher maintenance and supply echelons will consult the applicable Technical Orders of the 16-55 series.

3. EXPLANATION OF REFERENCE SYMBOLS APPEARING IN COLUMN ONE OF TABLE OF REPLACEABLE PARTS.

To identify parts of an equipment referred to in the text, in illustrations, and in the Table of Replaceable Parts itself, a reference symbol has been assigned to each part making up a major assembly of an equipment. Each symbol consists of an alphabetical portion and a numerical portion, separated by a hyphen. (Example: C-101.) The alphabetical portion denotes the type of part, classified in accordance with the following list:

Alphabetical Portion of Reference Symbol	*Type of Part*
A	Structural parts, panels, frames, castings, etc.
B	Motors and prime movers.
C	Capacitors of all types.
D	Dynamotors.
E	Miscellaneous electrical parts, insulators, knobs, brushes, etc.
F	Fuses.
G	Generators, exciters, etc.
H	Hardware, screws, bolts, studs, pins, snapslides, tools, etc.
I	Indicating devices (except meters and thermometers), pilot lamps, etc.
J	Jacks and receptacles (stationary).
K	Contactors, relays, circuit breakers, etc.
L	Inductors, radio-frequency and audio-frequency.
M	Meters of all types, gauges, thermometers, etc.
N	Nameplates, dials, charts, etc.
O	Mechanical parts, bearings, shafts, couplings, gears, ferrules, flexible shafts, housings, etc.
P	Plugs.
Q	Diaphragms (microphone, telephone, projector, etc.).
R	Resistors, fixed and variable (potentiometers, etc.).
S	Switches, interlocks, thermostats.
T	Transformers, radio-frequency, audio-frequency and power.
U	Hydraulic parts.
V	Vacuum and gaseous discharge tubes.
W	Wires, interconnecting cables, without plugs.
X	Sockets.
Y	Mechanical oscillators, crystals, magnetostriction tubes, etc.
Z	Impedances, such as traps (wave), etc.
BT	Batteries.
CR	Rectifiers (electrochemical, copper-oxide, selenium, crystal, etc., except vacuum or gaseous tubes).
HR	Heaters.

Alphabetical Portion of Reference Symbol	*Type of Part*
HS	Handset (telephone and microphone combination).
HT	Head telephones.
HX	Heat exchangers.
LS	Loudspeakers.
MG	Motor generators (single unit).
MI	Microphones (hand or chest type).
TY	Surge eliminators (special discharge resistors).
VR	Voltage regulators (except vacuum or gaseous tubes).

The numerical portion of the reference symbol is assigned as follows: Each part in each of the classifications of parts within a major assembly is assigned a number running consecutively for 99 numbers—from 101 to 199 for the first major assembly listed in the table, from 201 to 299 for the second major assembly, etc. If parts in one or more classifications of parts within a major assembly exceed 99 however, the next hundred series, e. g. 301 to 399, is assigned to that major assembly even though only part of the numbers in that series is used. The next major assembly then begins with the next series, e. g. 401 to 499. The block of numbers assigned to each major assembly of Radio Sets AN/ARC-3, AN/ARC-36 and AN/ARC-49 is shown in paragraph 5, this section. Only one reference symbol is assigned to a part, but suffix letters are sometimes added to distinguish between multiple electrical or mechanical characteristics of a part. Example: R-125A and R-125B each identify a part of resistor R-125.

4. ABBREVIATIONS.

Abbreviations used in the Table of Replaceable Parts are as follows:

Abbreviation	*Definition*
AF	Audio frequency
AM	Amplitude modulation
amp	ampere(s)
amplr	amplifier(s)
ant	antenna(s)
AVC	automatic volume control
AWG	American Wire Gauge
AWS	American War Standard
C	Centigrade
coef	coefficient
CRS	cold-rolled-steel
cyc	cycle(s)
d	deep or depth
DC	direct current
deg	degree(s)
diam	diameter(s)
DPDT	double-pole, double throw
DPST	double-pole, single throw
ea	each
fil	filament(s)
freq	frequency(ies)
gen	generator(s)
gnd	ground(ed)
h	high, height
horiz	horizontal
hy	henry(ies)
ID	inner diameter(s)
IF	intermediate frequency
lg	long, length
lb	pound(s)
ma	milliameter(s)
max	maximum
mc	megacycle(s)
mf	microfarad(s)
mmf	micromicrofarad(s)
mh	millihenry(ies)
min	minimum
mic	microphone
mtd	mounted
mtg	mounting
mtg/c	mounting center(s)
OD	outside diameter(s)
osc	oscillator
±	plus or minus
pri	primary(ies)
rad	radius
RF	radio frequency
RMS	root mean square
rpm	revolutions per minute
SD	soft-drawn
secd	secondary(ies)
Sig C	Signal Corps
SPDT	single-pole, double throw
SPST	single-pole, single throw
sq	square
std	standard(s)
SWG	Standard Wire Gauge
temp	temperature
thk	thick, thickness
transf	transformer(s)
wh	microhenry(ies)
v	volt(s)
vdcw	direct current working volts
vert	vertical
w	watt(s)
wd	wide, width
xmtr	transmitter(s)
xtal	crystal(s)

5. INDEX OF MAJOR ASSEMBLIES.

Major Assembly	*Numerical Series of Reference Symbols*	*Page*
Radio Transmitter	101-199	7-7
Radio Receiver	201-399	7-32
Power Junction Box J-68/ARC-3 or J-68A/ARC-3	401-499	7-63
Control Box C-118/ARC-3 or C-118A/ARC-3	501-599	7-69
Control, Radio Set C-1400/ARC-49	601-699	7-72
Control Unit C-197/ARC-3	801-899	7-73
Control Panel C-404/A or C-404A/A	901-999	7-74
Modification Kit MX-1131A/ARC	1000-1099	7-75

6. DECIMAL EQUIVALENTS OF WIRE GAUGES.

Wire Gauge	*Diameter*	
	AWG	*SWG*
0000	.460	.400
000	.40964	.372
00	.36480	.348
0	.32495	.324
1	.28930	.300
2	.25763	.276
3	.22942	.252
4	.20431	.232
5	.18194	.212
6	.16202	.192
7	.14428	.176
8	.12849	.160
9	.11443	.144
10	.10189	.128
11	.09074	.116
12	.08081	.104
13	.07196	.092
14	.06408	.080
15	.05706	.072
16	.05082	.064
17	.04525	.056
18	.04030	.048
19	.03589	.040
20	.03196	.036
21	.02846	.032
22	.025347	.028
23	.022571	.024
24	.0201	.022
25	.0179	.020
26	.01594	.018
27	.014195	.0164
28	.012641	.0148
29	.011257	.0136
30	.010025	.0124
31	.008928	.0116
32	.00795	.0108
33	.00708	.0100
34	.0063	.0092
35	.00561	.0084
36	.005	.0076
37	.00445	.0068
38	.003965	.0060
39	.003531	.0052
40	.003144	.0048

JOINT ARMY-NAVY TYPE DESIGNATION CODES FOR ELECTRICAL COMPONENTS

INTRODUCTION: Fixed and variable resistors and fixed capacitors manufactured under JAN specifications may be labeled with a *type designation code* instead of a color code or actual electrical value. For resistors and capacitors marked with the JAN type designation code, electrical values and other data can be determined by consulting the following information.

RESISTORS

FIXED, COMPOSITION

RC	10	AE	153	M
COMPONENT	STYLE	*CHARACTERISTIC	RESISTANCE	*TOLERANCE

COMPONENT: RC signifies *fixed, composition resistor.*

STYLE: A two-digit symbol indicates power rating and physical size.

Resistor style	Wattage
RC10, RC15, RC16	¼ WATT
RC20, RC21, RC25	½ WATT
RC30, RC31, RC35, RC38	1 WATT
RC40, RC41, RC45	2 WATTS
RC65	4 WATTS
RC75, RC76	5 WATTS

RESISTANCE: A three-digit symbol indicates the resistance value in ohms. The first two digits give the first two figures of the resistance value; the third digit gives the number of zeros which follow the first two figures.

RESISTORS

VARIABLE, WIRE-WOUND

RA	15	A	1	RH	103	A	K
COMPONENT	STYLE	SWITCH	*TORQUE	*SHAFT	RESISTANCE	*TAPER	*TOLERANCE

COMPONENT: RA signifies *variable, wire-wound resistor.*

STYLE: A two-digit symbol indicates power rating and physical size and shape.

SWITCH: Symbol A indicates no switch. Symbol B indicates a switch turned ON at start of clockwise rotation.

RESISTANCE: A three-digit symbol indicates the resistance value in ohms. The first two digits give the first two figures of the resistance value; the final digit gives the number of zeros which follow the first two figures. The letter *R* may be substituted to represent a decimal point; but when *R* is used, the last digit of the group becomes significant.

RHEOSTATS

WIRE-WOUND, POWER-TYPE

RP	35	2	FD	252	KK
COMPONENT	STYLE	OFF POSITION	*SHAFT	RESISTANCE	*TOLERANCE

COMPONENT: RP signifies all *rheostats.*

STYLE: Same as for variable, wire-wound resistors.

OFF POSITION:

Numeral	OFF position
1	None.
2	At end of counterclockwise rotation.
3	At end of clockwise rotation.

RESISTANCE: Same as for variable, wire-wound resistors.

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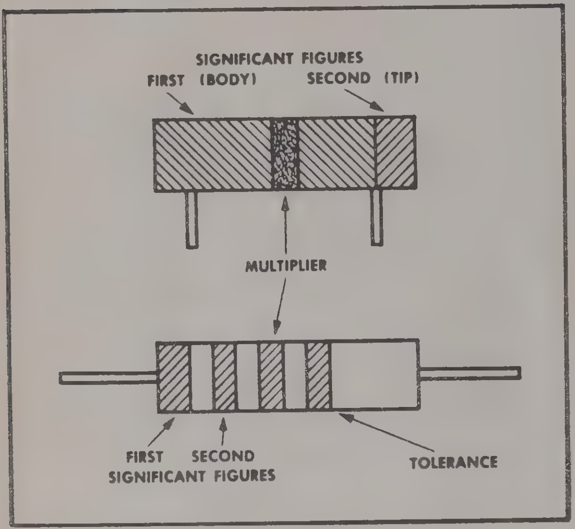
*Items starred are of interest primarily to depot and higher echelon repair personnel.

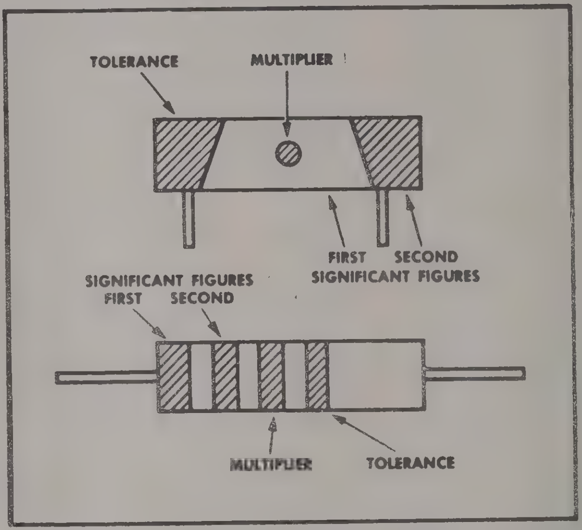
RESISTOR COLOR CODES

RMA COLOR CODE FOR FIXED COMPOSITION RESISTORS


SIGNIFICANT FIGURES
FIRST (BODY)
SECOND (TIP)
MULTIPLIER
FIRST SECOND
SIGNIFICANT FIGURES
TOLERANCE

Insulated fixed composition resistors with axial leads are designated by a natural tan background color. Non-insulated fixed composition resistors with axial leads are designated by a black background color.

JAN COLOR CODE FOR FIXED COMPOSITION RESISTORS


TOLERANCE
MULTIPLIER
FIRST SECOND
SIGNIFICANT FIGURES
SIGNIFICANT FIGURES
FIRST SECOND
MULTIPLIER
TOLERANCE

Resistors with axial leads are insulated. Resistors with radial leads are uninsulated.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	
RED	2	100	
ORANGE	3	1,000	
YELLOW	4	10,000	
GREEN	5	100,000	
BLUE	6	1,000,000	
VIOLET	7	10,000,000*	
GRAY	8	100,000,000*	
WHITE	9	1,000,000,000*	
GOLD		0.1*	5
SILVER		0.01*	10
NO COLOR			20

*JAN ONLY

Example: A 50,000-ohm resistor with a standard tolerance of 20 percent (no color) would be indicated by a green ring (5), a black ring (0), and an orange ring (000)

RMA: Radio Manufacturers Association
JAN: Joint Army-Navy

CAPACITORS

FIXED MICA-DIELECTRIC

CM	20	B	511	K
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE	*TOLERANCE

COMPONENT: CM signifies *fixed, mica-dielectric capacitor.*

CASE: A two-digit symbol identifies a physical case size and shape.

CAPACITANCE: A three-digit symbol indicates the capacitance value in micromicrofarads. The first two digits give the first two figures of the capacitance value; the final digit gives the number of zeros which follow the first two figures. When more than two significant figures are required, additional digits may be used, the last digit always indicating the number of zeros.

D-C WORKING VOLTAGE FOR CAPACITANCE RANGE

Case	Capacitance range	Vdcw
CM20	5-510 mmf	500
CM25	5-1,000 mmf	500
CM30	470-3,300 mmf	500
CM35	470-6,200 mmf	500
	6,800-10,000 mmf	500
CM40	3,300-8,200 mmf	500
	9,100-10,000 mmf	300

NOTE: Working voltages for capacitors above CM40 are stamped on the case.

The d-c working voltage of a capacitor can be determined from the above table when the case size and value of capacitance are known.

CAPACITORS

FIXED, MOLDED, PAPER-DIELECTRIC†

CN	36	A	302
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE

COMPONENT: CN signifies *fixed, molded, paper-dielectric capacitor.*

CASE: Same as for fixed, mica-dielectric capacitors.

CAPACITANCE: A three-digit symbol indicates the capacitance value in micromicrofarads. The first two digits give the first two figures of the capacitance value; the third digit gives the number of zeros which follow the first two figures.

D-C WORKING VOLTAGE FOR CAPACITANCE RANGE

Case	Capacitance	Vdcw
CN35	3,000 mmf	800
	6,000 mmf	600
	10,000 mmf	400
CN36	3,000 mmf	400
	6,000 mmf	400
	10,000 mmf	300
CN40	3,000 mmf	400
	6,000 mmf	300
	10,000 mmf	300
CN41	3,000 mmf	600
	6,000 mmf	600
	10,000 mmf	400

The d-c working voltage of a capacitor can be determined from the above table when the case size and value of capacitance are known.

CAPACITORS

FIXED, CERAMIC-DIELECTRIC

CC	20	AH	100	G
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE	*TOLERANCE

COMPONENT: CC signifies *fixed, ceramic-dielectric capacitor.*

CASE: Same as for fixed, mica-dielectric capacitors.

CAPACITANCE: Same as for fixed, molded, paper-dielectric capacitors.

NOTE: All fixed, ceramic-dielectric capacitors have a working voltage of 500 volts, d-c.

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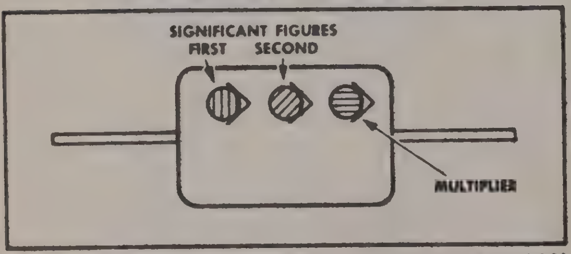
*Items starred are of interest primarily to depot and higher echelon repair personnel.

†This is not a JAN specification. These capacitors are covered by AWS C75/221

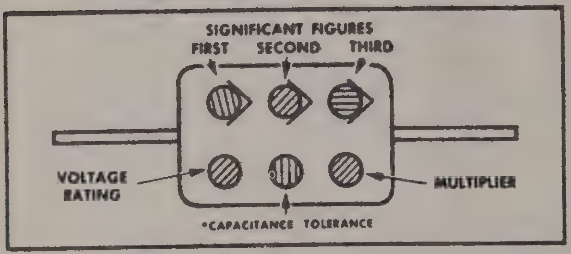
CAPACITOR COLOR CODES

RMA 3-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS

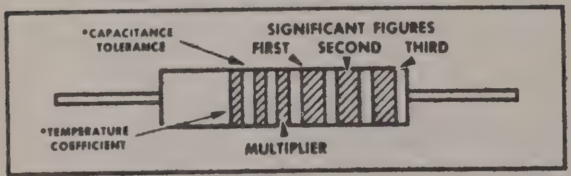

SIGNIFICANT FIGURES
FIRST
SECOND
MULTIPLIER

Capacitors marked with this code have a voltage rating of 500 volts.

RMA 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS


SIGNIFICANT FIGURES
FIRST
SECOND
THIRD
VOLTAGE RATING
MULTIPLIER
*CAPACITANCE TOLERANCE

RMA COLOR CODE FOR TUBULAR CERAMIC-DIELECTRIC CAPACITORS


*CAPACITANCE TOLERANCE
SIGNIFICANT FIGURES
FIRST
SECOND
THIRD
*TEMPERATURE COEFFICIENT
MULTIPLIER

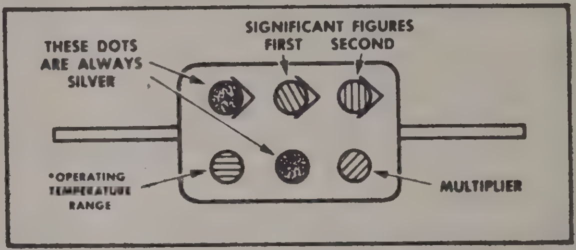
Capacitors marked with this code have a voltage rating of 500 volts.

RMA Radio Manufacturers Association JAN· Joint Army-Navy

Note These color codes give all capacitances in micromicrofarads.

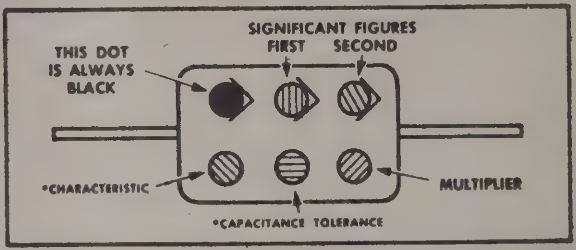
*Items marked with an asterisk are of interest primarily to depot and higher echelon repair personnel

JAN 6-DOT COLOR CODE FOR PAPER-DIELECTRIC CAPACITORS


SIGNIFICANT FIGURES
FIRST
SECOND
THESE DOTS ARE ALWAYS SILVER
*OPERATING TEMPERATURE RANGE
MULTIPLIER

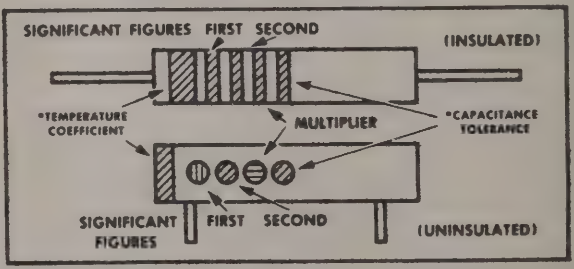
The silver dots serve to identify this marking. For working voltages see JAN type designation code.

JAN 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS


SIGNIFICANT FIGURES
FIRST
SECOND
THIS DOT IS ALWAYS BLACK
*CHARACTERISTIC
MULTIPLIER
*CAPACITANCE TOLERANCE

The black dot serves to identify this code. For working voltages see JAN type designation code.

JAN COLOR CODE FOR FIXED CERAMIC-DIELECTRIC CAPACITORS


SIGNIFICANT FIGURES FIRST SECOND
(INSULATED)
*TEMPERATURE COEFFICIENT
MULTIPLIER
*CAPACITANCE TOLERANCE
SIGNIFICANT FIGURES
FIRST
SECOND
(UNINSULATED)

Capacitors marked with this code have a voltage rating of 500 volts. Either the band or dot code may be used.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER			RMA VOLTAGE RATING
		RMA MICA-AND CERAMIC-DIELECTRIC	JAN MICA-AND PAPER-DIELECTRIC	JAN CERAMIC-DIELECTRIC	
BLACK	0	1	1	1	
BROWN	1	10	10	10	100
RED	2	100	100	100	200
ORANGE	3	1,000	1,000	1,000	300
YELLOW	4	10,000			400
GREEN	5	100,000			500
BLUE	6	1,000,000			600
VIOLET	7	10,000,000			700
GRAY	8	100,000,000		0.01	800
WHITE	9	1,000,000,000		0.1	900
GOLD		0.1	0.1		1,000
SILVER		0.01	0.01		2,000
NO COLOR					500

TABLE OF PARTS

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
101-199 series	1600	224643270	RADIO TRANSMITTER T-67/ARC-3: AM; 100 to 156 mc; output 8 w; input 28 v dc, 10 amp; mtd in metal cabinet; 15¼" lg x 12⅛" wd x 7½" h; (8 crystal controlled channels; 9 tubes; includes tubes and Mounting Base MT-238/ARC-3).	VHF Radio Transmitter	Sylvania 55700-1
101-199 series	1600	014480300	RADIO TRANSMITTER T-67A/ARC-3: AM; 100 to 156 mc; output 8 w; input 28 v dc, 10 amp; mtd in metal cabinet; 15¼" lg x 12⅛" wd x 7½" h; (8 crystal controlled channels; 9 tubes; includes tubes).	VHF Radio Transmitter	Sylvania 66925-1
101-199 series	1600	014480110	RADIO TRANSMITTER T-67B/ARC-3: AM; 100 to 156 mc; output 8 w; input 28 v dc, 10 amp; mtd in metal cabinet; 15¼" lg x 12⅛" wd x 7½" h; (8 crystal controlled channels; 9 tubes; includes tubes).	VHF Radio Transmitter	Sylvania 69500-1
101-199 series			RADIO TRANSMITTER T-312/ARC-36: AM; 100 to 156 mc; output 8 w; input 28 v dc, 10 amp; mtd in metal cabinet; 16⅞" lg x 12⅛" wd x 7½" h; (16 crystal controlled channels; 9 tubes; includes tubes).	VHF Radio Transmitter	Sylvania 55700-1
101-199 series			RADIO TRANSMITTER T-312A/ARC-36: AM; 100 to 156 mc; output 8 w; input 28 v dc, 10 amp; mtd in metal cabinet; 16⅞" lg x 12⅛" wd x 7½" h; (16 crystal controlled channels; 9 tubes; includes tubes).	VHF Radio Transmitter	Sylvania 66925-1
101-199 series			RADIO TRANSMITTER T-312B/ARC-36: AM; 100 to 156 mc; output 8 w; input 28 v dc, 10 amp; mtd in metal cabinet; 16⅞" lg x 12⅛" wd x 7½" h; (16 crystal controlled channels; 9 tubes; includes tubes).	VHF Radio Transmitter	Sylvania 69500-1
101-199 series			RADIO TRANSMITTER T-452/ARC-49: AM; 100 to 156 mc; output 8 w; input 28 v dc, 10 amp; mtd in metal cabinet; 15¼" lg x 12⅛" wd x 7½" h; (48 crystal controlled channels; 9 tubes; includes tubes).	VHF Radio Transmitter	Sylvania 80500-1
	1600	293346544	MOUNTING BASE, MT-238C/ARC-3: 12¼" lg x $11\frac{13}{16}$" wd x $2\frac{3}{16}$" h overall; extruded center opening 5½" sq; (c/o mtg plate w/4 snapslide fastener studs; 2 mtg base channels 12" lg x 2⅝" wd x $\frac{5}{16}$" h; 2 ground straps; vibration mounts A-101, A-102, A-103, and A-104); marked "MT-238C/ARC-3". (AF Part No. 51D13674-3).	Mounts Radio Transmitter	Sylvania 77822-1

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
A-101	6600	574869-34	MOUNT, Vibration: round; load range 3 to 6 lb.; 1½" h approx overall; rubber cushion; hex center post tapped No. 8-32 NC-2B thd, $\frac{9}{32}$" deep; alum cup-shaped holder; square base $1\frac{13}{16}$" x $1\frac{13}{16}$"; base attached to holder by 4 alum grommets approx $\frac{3}{16}$" ID x ⅛" h mounted in corners on 1⅜" centers; part of Mounting Base MT-238C/ARC-3.	Mounts MT-238C/ARC-3	Sylvania 77808-2 Barry 770-6G
A-102	6600	574869-4	MOUNT, Vibration; load range 5½ to 9 lb; 1½" h approx overall; rubber cushion; hex center post tapped No. 8-32 NC-2B thd, $\frac{9}{32}$" deep; alum cup-shaped holder; square base $1\frac{13}{16}$" x $1\frac{13}{16}$"; base attached to holder by 4 alum grommets approx $\frac{3}{16}$" ID x ⅛" h mounted in corners on 1⅜" centers; part of Mounting Base MT-238C/ARC-3.	Mounts MT-238C/ARC-3	Sylvania 77808-3 Barry 770-9G
A-103	6600	574869-34	MOUNT, Vibration: same as A-101	Mounts MT-238C/ARC-3	Sylvania 77808-2 Barry 770-6G
A-104	6600	574869-4	MOUNT, Vibration: same as A-102	Mounts MT-238C/ARC-3	Sylvania 77808-3 Barry 770-9G
A-105*			BRACKET, Relay; "S" shape; CRS cadmium plated; $1\frac{5}{16}$" lg x ⅜"wide x 2⅜" h; (1 mtg hole $\frac{11}{64}$" diam).	Mounts K-103	Sylvania 56421-1
B-101	1600	375700820	MOTOR, DC: shunt field; 0.015 hp closed frame; $2\frac{15}{16}$" h x $1\frac{33}{64}$" dia overall; shaft $\frac{3}{16}$" dia x $1\frac{3}{32}$" lg at base; ⅜" lg at top; 28 v dc, ½ amp; 12,000 rpm; (fixed mtg base; mtd w/3 No. 6-32 holes on ⅝" x $1\frac{3}{32}$" x 1¼" centers; 1 wire lead 3¾" lg).	Tuning Drive	Sylvania 56103-1
C-101	3330	313889925	CAPACITOR, fixed: ceramic; 100 mmf ± 5% −750 mmf/mf/deg C temp coef; 500 vdcw; 0.812" max lg x 0.250" max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼" min lg). (AF Part No. 3DK9100-106)	Osc grid leak bypass	JAN CC26UK101J
C-102 (Used on ARC-3 & ARC-36 only)	3330	313004515	CAPACITOR, fixed: ceramic; 10 mmf ±0.25 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562" max lg x 0.250" max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼" min lg). (AF Part No. 3D9010-62)	Osc grid coupling	JAN CC21CH100C
C-103 (Used on ARC-3 & ARC-36 only)	3330	313584160	CAPACITOR, fixed: ceramic; 51 mmf ±2%, 0 mmf/mf/deg C temp coef; 500 vdcw; 1.328" max lg x 0.340" max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼" min lg). (AF Part No. 3D9051-11)	Osc cathode bypass	JAN CC36CG510G

C-105 (Used on ARC-3 & ARC-36 only)	3330	316777419	CAPACITOR, fixed: paper; 100,000 mmf +20% −10%; 600 vdcw; 2¼″ max lg x $\frac{21}{32}$″ max dia; (metal case, hermetically sealed; mineral oil impregnation; 1 axial wire lead 1$\frac{7}{32}$″ lg; 1 mtg hole $\frac{3}{16}$″ dia). (AF Part No. 3DA100-576)	Osc screen bypass	JAN CP28A1EF104K
C-106*			CAPACITOR, variable: air dielectric; 8 to 114 mmf; 2500 v rms test; 0.0112″ air gap; shaft 0.312″ dia x $\frac{13}{16}$″ lg; other end ½″ lg; (15 plates; steatite insulation; 3 mtg studs No. 6-32 threads; 120° spacing on ½″ rad).	Osc plate tuning	Sylvania 55582-1
C-107†	3330	313371019	CAPACITOR, fixed: ceramic; 36 mmf ±1%; 0 mmf/mf/deg C temp coef; 500 vdcw; 1.328″ max lg x .340″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9036-1)	Osc plate trimmer	JAN CC36CH360F
C-107	3330	313338156	CAPACITOR, fixed: ceramic; 33 mmf ±2%; 0 mmf/mf/deg C temp coef; 500 vdcw; 1.328″ dia (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9033-20)	Osc plate trimmer	JAN CC36CH330G
C-108	3330	317680796	CAPACITOR, fixed: paper; 10,000 mmf +20% −10%; 600 vdcw; $\frac{53}{64}$″ sq x $\frac{11}{32}$″ thk; (molded bakelite case; wax or varnish impregnation; 2 axial wire leads, 1¼″ min lg.) (AF Part No. 3DA-10-367)	Osc plate bypass	JAN CN35A103M
C-109	3330	313889925	CAPACITOR, fixed: same as C-101	Osc plate coupling	JAN CC26UK101J
C-111	3330	376050000	CAPACITOR, fixed: mica; 1000 mmf ±100%; 500 vdcw; 1$\frac{7}{64}$″ max lg x $\frac{15}{32}$″ wd x $\frac{7}{32}$″ thk; (molded bakelite case; wax or varnish impregnation; 2 axial wire leads, 1⅛″ min lg). (AF Part No. 3K2510221)	1st harmonic gen cathode bypass	JAN CM25B102K
C-112	3330	314693355	CAPACITOR, fixed: mica; 500 mmf +15% −5%; 500 vdcw; $\frac{11}{32}$″ lg x $\frac{29}{64}$″ dia; (metal button type case; wax impregnation; 1 term, ½″ lg; 1 mtg hole tapped No. 3-48)	1st harmonic gen screen bypass	Sylvania 55651-1
C-113	3330	313377115	CAPACITOR, fixed: ceramic; 39 mmf ±1% −330 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg).	1st harmonic gen plate bypass	JAN CC21SL390F
C-114	3330	313330300	CAPACITOR, fixed: ceramic; 30 mmf ±2%; −80 mmf/mf/deg C temp coef; 500 vdcw; 0.812″ max lg x 0.250″ dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9030-33)	1st harmonic gen plate coupling	JAN CC26LJ300G
C-115*			CAPACITOR, variable: air dielectric; 4.4 to 37.4 mmf; 2,500 v rms test; 0.0208″ air gap; 1$\frac{13}{16}$″ sq x 1.384″ h; shaft 0.312″ diam x $\frac{21}{32}$″ lg; other end $\frac{19}{32}$″ lg; (9 plates; steatite insulation; 3 mtg studs No. 6-32 threads; 120-degree spacing on ½″ rad).	2nd harmonic gen grid tuning	Sylvania 55581-1

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* Not available as a spare part, listed for reference only.

† Used only on Radio Transmitters T-67/ARC-3, T-312/ARC-36, and on T-67/ARC-3 and T-312/ARC-36 with "M-1" modification.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
C-116	3330	312906000	CAPACITOR, fixed: ceramic; 7 mmf ±0.25 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9007)	2nd harmonic gen grid trimmer	JAN CC21CH070C
C-117	3330	315157715	CAPACITOR, fixed: ceramic; 2000 mmf ±10%; −750 mmf/mf/deg C temp coef; 200 vdcw; ¾″ dia x ⅝″ thk; (metal button type case; wax treated; 1 solder lug type term, $\frac{9}{32}$″ lg; 1 No. 6-32 tapped hole for mtg).	2nd harmonic gen grid bypass	Sylvania 55692-1 Erie Type 160H
C-118	3330	313889925	CAPACITOR, fixed: same as C-101	2nd harmonic gen grid motor bypass	JAN CC26UK101J
C-119	3330	313889925	CAPACITOR, fixed: same as C-101	2nd harmonic gen cathode bypass	JAN CC26UK101J
C-120	3330	314146585	CAPACITOR, fixed: mica; 200 mmf +15% −5%; 500 vdcw; $\frac{11}{32}$″ lg x $\frac{29}{64}$″ dia; (metal button type case; wax impregnation; 1 term, ½″ lg; 1 mtg hole tapped No. 3-48). (AF Part No. 3D9200-79)	Control tube grid filter	Sylvania 55651-2 Erie Type 370B-200
C-121	3330	314146585	CAPACITOR, fixed: same as C-120	Control tube grid filter	Sylvania 55651-2 Erie Type 370B-200
C-122*			CAPACITOR, variable: air dielectric; 3 to 21 mmf; 2,500 v rms test; 0.019″ air gap; 1$\frac{13}{16}$″ sq x 1.384″ h; shaft 0.312″ dia x $\frac{13}{16}$″ lg; other end $\frac{19}{32}$″ lg; (5 plates; steatite insulation; 3 mtg studs No. 6-32 threads; 120° spacing on ½″ rad).	2nd harmonic gen plate tuning	Sylvania 55580-1
C-123	3330	313004515	CAPACITOR, fixed: same as C-102	2nd harmonic gen plate coupling	JAN CC21CH100C
C-124	3330	313004515	CAPACITOR, fixed: same as C-102	2nd harmonic gen plate coupling	JAN CC21CH100C
C-125	3330	313402260	CAPACITOR, fixed: mica; 40 mmf ±1.0 mmf; 500 vdcw; $\frac{11}{32}$″ lg x $\frac{29}{64}$″ dia; (metal button type case; 1 solder lug term. ½″ lg; 1 mtg hole tapped No. 3-48).	Power amplr grid bypass	Sylvania 55651-3 Erie Type 370B-40
C-126	3330	313402260	CAPACITOR, fixed: same as C-125	Power amplr grid bypass	Sylvania 55651-3 Erie Type 370B-40

C-127	3330	313889835	CAPACITOR, fixed: mica; 100 mmf ±15% −5%; 500 vdcw; $\frac{11}{32}$" lg x $\frac{29}{64}$" dia; (metal button type case; wax impregnation; 1 term. $\frac{1}{2}$" lg; 1 mtg hole tapped No. 3-48) (AF Part No. 3D9100-181)	Power amplr cathode bypass	Sylvania 55651-4 Erie Type 370B-100
C-128	3330	317511310	CAPACITOR, fixed: dry electrolytic; 22.5 mf min; 50 vdcw; $1\frac{5}{8}$" max lg x $\frac{7}{8}$" max dia; (metal case; 1 axial wire lead, $1\frac{1}{2}$" lg; 1 term on other end; mts w/clamp in center of case which has $\frac{11}{64}$" mtg hole).	Power amplr cathode bypass	Sylvania 55501-1 Mallory 95189
C-129*			CAPACITOR, variable: air dielectric; 4 to 17 mmf; 2,500 v rms test; 0.0243" air gap; $1\frac{13}{16}$" sq x $2\frac{1}{4}$" h; shaft $\frac{13}{16}$" lg x 0.312" diam; (9 plates; split stator type; steatite insulation; 3 mtg studs No. 6-32 threads; 120-degree spacing on $\frac{1}{2}$" rad).	Power amplr plate tuning	Sylvania 55523-1
C-130*			CAPACITOR, variable: air dielectric; 3 to 25 mmf; 500 v rms test; 0.012" air gap; $1\frac{3}{16}$" lg x $\frac{15}{16}$" wd x $\frac{13}{16}$" thk; shaft $\frac{5}{8}$" lg x $\frac{1}{4}$" diam; (7 plates; steatite insulation; 2 mtg studs tapped No. 4-40 on $\frac{21}{32}$" mtg/c).	Ant coupling	Sylvania 55587-1
C-131	3330	313889925	CAPACITOR, fixed: same as C-101	Power amplr fil center tap bypass	JAN CC26UK101J
C-132	3330	313889925	CAPACITOR, fixed: same as C-101	Power amplr fil bypass	JAN CC26UK101J
C-133	3330	313889925	CAPACITOR, fixed: same as C-101	2nd harmonic gen fil bypass	JAN CC26UK101J
C-134	3330	317680796	CAPACITOR, fixed: same as C-108	Lock-in cam-switch bypass	JAN CN35A103M
C-135	3330	317680796	CAPACITOR, fixed: same as C-108	Stop cam-switch bypass	JAN CN35A103M
C-136	3330	316772005	CAPACITOR, fixed: paper; 850,000 mmf +30% −10%; 600 vdcw; $1\frac{15}{32}$" h x $1\frac{19}{32}$" dia; (metal case; hermetically sealed; mineral oil impregnation; 1 solder lug type term on top; 3 mtg feet w/No. 6-32 tapped holes; 120° spacing on $\frac{1}{2}$" rad) (AF Part No. 3DA850-2)	Control tube screen bypass	Sylvania 55850-1 Sprague Type P4481
C-137	3330	318001225	CAPACITOR, fixed: paper; 250,000 mmf +20% −10%; 600 vdcw; $2\frac{19}{32}$" lg x $\frac{3}{4}$" dia; (metal case; hermetically sealed; mineral oil impregnation; 1 axial wire lead, $1\frac{7}{8}$" lg; radial clamp mtg: 2 holes $\frac{1}{8}$" dia on $\frac{5}{16}$" mtg/c). (AF Part No. 3DA250-205)	Clutch solenoid arc suppressor	JAN CP28A1EF254K
C-138	3330	314693355	CAPACITOR, fixed: same as C-112	Motor hash filter	Sylvania 55651-1
C-139	3330	317680810	CAPACITOR, fixed: paper; 10,000 mmf ±10%; 600 vdcw; $1\frac{7}{16}$" max lg x $\frac{53}{64}$" max. wd. x $\frac{11}{32}$" max thk; (molded bakelite case; wax treated; mineral oil impregnation; 2 No. 20 pigtail wire leads, $1\frac{1}{4}$" lg). (AF Part No. 3DA10-124)	Tone osc tuning	JAN CN42A103M

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
C-140	3330	315993441	CAPACITOR, fixed: paper; 20,000 mmf ±20%; 600 vdcw; $1\frac{7}{16}''$ max lg x $\frac{53}{64}''$ max wd x $\frac{11}{32}''$ max thk; (molded bakelite case; wax treated; mineral oil impregnation; 2 axial wire leads, $1\frac{1}{4}''$ lg). (AF Part No. 3DA20-249)	Tone osc grid coupling	JAN CN42A203M
C-141	3330	317511310	CAPACITOR, fixed: same as C-128	Speech amplr cathode bypass	Sylvania 55501-1 Mallory 95189
C-142	3330	315993441	CAPACITOR, fixed: same as C-140	Sidetone coupling	JAN CN42A203M
C-143	3330	317511305	CAPACITOR, fixed: dry electrolytic; 22.5 mf min; 50 vdcw; $1\frac{11}{16}''$ lg x 1″ dia; (metal case; hermetically sealed; filled with potting compound; 2 terms on top, $\frac{7}{16}''$ lg; mtg not furnished). (AF Part No. 3DB22E5-1)	Modulator cathode bypass	Sylvania 55164-1 Aerovox LE-EP
C-144	3330	315993441	CAPACITOR, fixed: same as C-140	Sidetone degeneration	JAN CN42A203M
C-145	3330	317511305	CAPACITOR, fixed: same as C-143	Mic transf bypass	Sylvania 55164-1 Aerovox LE-EP
C-146	3330	376050000	CAPACITOR, fixed: same as C-111	Sidetone plate bypass	JAN CM25B102K
C-147	3330	316772005	CAPACITOR, fixed: same as C-136	Mod screen bypass	Sylvania 55850-1 Sprague Type P4481
C-148	3330	314941583	CAPACITOR, fixed: paper; 1000 mmf +60% −10%; 600 vdcw; $\frac{53}{64}''$ sq x $\frac{11}{32}''$ thk; (molded bakelite case; wax treated; mineral oil impregnation; 2 wire leads, $1\frac{1}{4}''$ lg.) (AF Part No. 3DA1-253)	Mod plate bypass	JAN CN30A102M
C-149	3330	314941583	CAPACITOR, fixed: same as C-148	Mod plate bypass	JAN CN30A102M
C-150†	3300	312714115	CAPACITOR, fixed: ceramic; 1 mmf ±.25 mmf; 0 mmf/mf/deg C temp coef; 1,000 vdcw; 0.562″ max lg. x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; $1\frac{1}{4}''$ min lg). (AF Part No. 3D9001-12	Power amplr plate trimmer	Sylvania 56451-1 Erie Type NPOA
C-151†	3300	312714115	CAPACITOR, fixed: same as C-150	Power amplr plate trimmer	Sylvania 56451-1 Erie Type NPOA

E-101	8880	500577-6655	BOARD, terminal: 5 brass cadmium-plated post type terminals; molded bakelite; $2\frac{3}{8}$″ lg x 1″ wd x $\frac{3}{32}$″ thk; (cadmium-plated CRS bracket w/2 mtg holes $\frac{7}{32}$″ dia on $2\frac{3}{4}$″ mtg/c; marked "C-118," "R-112," and "R-113"). (AF Part No. 2Z9405.102)	Mounts C-118, R-112 and R-113	Sylvania 55734-1
E-102	8880	500177-4555	BOARD, terminal: 1 brass cadmium-plated post type terminal; molded bakelite; $\frac{7}{8}$″ lg x $\frac{3}{8}$″ wd x $\frac{3}{32}$″ thk; (1 mounting hole $\frac{5}{32}$″ dia; marked "C-133"). (AF Part No. 2Z9401.86)	Mounts C-133	Sylvania 55433-2
E-103	8880	500277-7895	BOARD, terminal: 2 brass cadmium-plated post type terminals; molded bakelite; $2\frac{3}{8}$″ lg x $\frac{7}{8}$″ wd x $\frac{3}{32}$″ thk; (cadmium-plated CRS bracket; 1 No. 6-32 tapped mtg hole and one $\frac{7}{64}$″ mtg ear on $\frac{1}{4}$″ mtg/c; marked "R-119" and "R-120"). (AF Part No. 2Z9402.258)	Mounts R-119 and R-120	Sylvania 55739-1
E-104	8880	500377-5655	BOARD, terminal: 3 brass cadmium-plated post type terminals; molded bakelite; $2\frac{3}{16}$″ lg x $\frac{13}{16}$″ wd x $\frac{3}{32}$″ thk; (2 mtg holes $\frac{5}{32}$″ dia on $1\frac{13}{16}$″ mtg/c; marked "C-129," "L-111," "R-114," and "4T"). (AF Part No. 2Z9403.162)	Mounts C-129, L-111, and R-114	Sylvania 55472-1
E-105	8880	500877-5355	BOARD, terminal: 8 brass cadmium-plated post type terminals; molded bakelite; $2\frac{5}{8}$″ lg x $1\frac{1}{2}$″ wd x $\frac{3}{32}$″ thk; (2 metal inserts for mtg w/2 No. 6-32 tapped holes on 1″ mtg/c; marked "R-101," "R-102," "R-107," "R-108," and "R-138"). (AF Part No. 2Z9408.130)	Mounts R-101, R-102, R-107, R-108, and R-138	Sylvania 55612-1
E-106	8880	500677-2455	BOARD, terminal: 6 brass cadmium-plated post type terminals; molded bakelite; $1\frac{3}{4}$″ lg x $1\frac{1}{8}$″ wd x $\frac{3}{32}$″ thk; (2 metal inserts for mtg w/2 No. 6-32 tapped holes on 1″ mtg/c; marked "C-101" and "C-113"). (AF Part No. 2Z9406.167)	Mounts C-101 and C-113	Sylvania 55715-1
E-107	8880	501409-3955	BOARD, terminal: 13 brass cadmium-plated post type terminals; 1 tinned copper solder lug type terminal; molded bakelite; $2\frac{1}{2}$″ lg x $2\frac{1}{16}$″ wd x $\frac{3}{32}$″ thk; (1 cadmium-plated CRS bracket; 1 No. 6-32 tapped hole and $\frac{7}{64}$″ wd mtg ear on $\frac{1}{4}$″ mtg/c; marked "C-142," "C-144," and "R-118" on one side and, "R-117," "R-139," "R-140," "R-143," and "R-145" on the other side). (AF Part No. 2Z9414.63)	Mounts C-142, C-144, R-117, R-118, R-139, R-140, R-143 and R-145	Sylvania 55427-1
E-108	8880	500177-4955	BOARD, terminal: 1 brass cadmium-plated post type terminal; molded bakelite; $\frac{7}{8}$″ lg x $\frac{3}{8}$″ wd x $\frac{3}{32}$″ thk; (1 mounting hole $\frac{5}{32}$″ dia; marked "L-102" and "R-103"). (AF Part No. 2Z9401.85)	Mounts L-102 and R-103	Sylvania 55433-3
E-109	8880	500377-5455	BOARD, terminal: 2 brass cadmium-plated post type terminals; molded bakelite; $2\frac{1}{8}$″ lg x $1\frac{1}{8}$″ wd x $\frac{3}{32}$″ thk; (2 mtg holes $\frac{5}{32}$″ dia on $1\frac{3}{4}$″ mtg/c; marked "L-112" and "R-122"). (AF Part No. 2Z9403.164)	Mounts L-112 and R-122	Sylvania 55742-1

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† Not used except in early production models.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
E-110	8880	500677-5855	BOARD, terminal: 6 brass cadmium-plated post type terminals; molded bakelite; 2$\frac{5}{8}$″ lg x 1$\frac{1}{2}$″ wd x $\frac{3}{32}$″ thk; (2 metal inserts for mtg w/2 No. 6-32 tapped holes on 1″ mtg/c; marked "R-104," "R-105," and "R-110"). (AF Part No. 2Z9406.166)	Mounts R-104, R-105 and R-110	Sylvania 55643-2
E-111	8880	500677-5755	BOARD, terminal: 6 brass cadmium-plated post type terminals; molded bakelite; 2$\frac{5}{8}$″ lg x 1$\frac{1}{2}$″ wd x $\frac{3}{32}$″ thk; (2 metal inserts for mtg w/2 No. 6-32 tapped holes 1″ mtg/c; marked "R-115," "R-127," and "R-128"). (AF Part No. 2Z9406.165)	Mounts R-115, R-127 and R-128	Sylvania 55643-1
E-112	8880	500177-4155	BOARD, terminal: 1 brass cadmium-plated post type terminal; molded bakelite; $\frac{7}{8}$″ lg x $\frac{3}{8}$″ wd x $\frac{3}{32}$″ thk; (1 mounting hole $\frac{5}{32}$″ dia; marked "C-123"). (AF Part No. 2Z9401.84)	Mounts C-123	Sylvania 55433-1
E-113	8880	500677-8355	BOARD, terminal: 6 brass cadmium-plated post type terminals; molded bakelite; 3$\frac{11}{16}$″ lg x 1$\frac{1}{2}$″ wd x $\frac{3}{32}$″ thk; (2 metal inserts for mtg w/2 No. 6-32 tapped holes on 1$\frac{3}{8}$″ mtg/c; marked "C-139," "C-140," "R-136," "R-137," and "T-101"). (AF Part No. 2Z9406.168)	Mounts C-139, C-140, R-136, R-137 and T-101	Sylvania 55536-1
E-114	8880	500177-5355	BOARD, terminal: 1 brass cadmium-plated post type terminal; molded bakelite; $\frac{7}{8}$″ lg x $\frac{3}{8}$″ wd x $\frac{3}{32}$″ thk; (1 mounting hole $\frac{5}{32}$″ dia.) (AF Part No. 2Z9401.83)	Mounts R-126	Sylvania 55433-4
E-115	8880	500377-2255	BOARD, terminal: 3 brass cadmium-plated post type terminals; molded bakelite; 1$\frac{1}{4}$″ lg x $\frac{23}{32}$″ wd x $\frac{3}{32}$″ thk; (2 mtg holes $\frac{1}{8}$″ dia on $\frac{3}{4}$″ mtg/c). (AF Part No. 2Z9403.161)	Motor wire junction	Sylvania 56122-1
E-116*			BOARD, terminal: 2 double solder lug terminals: molded bakelite; 1$\frac{15}{32}$″ lg x 1$\frac{19}{64}$″ wd x $\frac{1}{4}$″ thk; (7 tooth gear-rack molded into bakelite).	Mounts ant coupling coil	Sylvania 55456-1
E-117	3340	287641451	CORE ASSEMBLY, adjustable tuning: powdered iron; adjusting core for RF coil; $\frac{1}{2}$″ lg x 0.370″ dia; with 1″ No. 8-32 screw; (assembled with screw-clamp 1$\frac{5}{16}$″ lg x $\frac{7}{16}$″ wd x $\frac{1}{4}$″ thk; 2 mtg holes No. 6-32 tapped on 1″ mtg/c). (AF Part No. 2Z3262-12)	Adjusting core for L-103	Sylvania 55696-1

E-118	3320	292112102	KNOB, round: Al; for 3/16″ dia shaft; single No. 6-32 set screw; 7/16″ dia x 3/4″ h overall; shaft hole 7/16″ deep; (medium diamond knurl). (AF Part No. 2Z5753.35)	Motor manual tuning	Sylvania 55654-1
E-119*			SHAFT, adjusting: brass, cadmium-plated; 1 7/32″ lg x 0.185″ dia; bearing 13/16″ lg x 3/8″ wd x 3/4″ h; 2 mtg holes 9/64″ dia on 9/16″ mtg/c; (18 tooth gear at one end of shaft; screwdriver slot adjustment).	Ant load adjustment	Sylvania 55500-1
E-120 to E-143	1600	333015170	WASHER, Insulator: round; molded black bakelite; wax impregnation; 3/8″ OD x 0.140″ ID x 1/8″ thk. (AF Part No. 3G1838-6.34)	Insulation	Sylvania 55636-1
E-144 to E-145	1600	333011919	WASHER, Insulator: round; molded black bakelite; wax impregnation; 9/16″ OD x 0.140″ ID x 3/16″ thk. (AF Part No. 3G1838-9.16)	Insulation	Sylvania 55722-1
E-146 to E-157	3320	331023520	INSULATOR, bead: cylindrical; steatite, silicone coated; moisture proofed; 13/64″ lg x .200″ OD x 5/64″ ID. (AF Part No. 3G90-1)	Power amplr plate lead insulation	Sylvania 55160-1 Isolantite AC-140
E-158 to E-159	1600	010978000	CLIP ASSEMBLY, tube contact: beryllium copper, silver plated; 3/4″ lg x 3/8″ wd x 0.050″ thk; (uninsulated; spring clamp connection; 1 7/8″ copper wire cable attached: for a 0.052″ to 0.060″ dia pin). (AF Part No. 2Z2726.32)	Power amplr plate connection	Sylvania 56995-1
E-160	3370	131000-2575	CLIP ASSEMBLY, tube contact: beryllium copper, silver plated; 3/4″ lg x 3/8″ wd x 0.050″ thk; (uninsulated; spring clamp connection; 2 1/2″ copper braid attached). (AF Part No. 2Z2726.33)	2nd harmonic gen plate connection	Sylvania 56453-1
E-161	3370	131000-3155	CLIP ASSEMBLY, tube contact: beryllium copper, silver plated; 3/4″ lg x 3/8″ wd x 0.050″ thk; (uninsulated; spring clamp connection; 2 15/16″ copper braid attached). (AF Part No. 2Z2726.31)	2nd harmonic gen plate connection	Sylvania 56453-2
E-162 to E-163	1600	374439620	BRUSH, electrical contact: carbon; 28 vdc, 1 amp; 0.154″ sq x 7/32″ lg; (terminal connected to brush by flexible copper wire and spring 1/2″ lg). (AF Part No. 3H525-73)	Tuning motor brush	Sylvania 56170-1 F.A. Smith Co. 11-120
E-164*			SHIELD, tube: Al, caustic dipped; round ring, 2 5/16″ dia with mounting base 2 7/16″ sq.; 5/8″ h; 4 slots 11/64″ wd for mounting on 1 7/8″ x 1 7/8″ mtg/c.	Shield for V-103	Sylvania 55458-1
E-165*			SHIELD, tube: same as E-164	Shield for V-104	Sylvania 55458-1
H-101	1600	657635830	NUT, cap: Al; 3/8″-32 thd; 13/32″ dia, 9/16″ h, 1/2″ wd. across flats. (AF Part No. 6L2436-32)	Bias control cover	Sylvania 55576-1

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TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
H-102 to H-113	1600	651964500	NUT, shoulder: brass, silver pl; No. 6-32; $\frac{9}{32}$″ h, $\frac{13}{64}$″ dia w/hex shoulder $\frac{1}{4}$″ wd across flats. (AF Part No. 6L3846-32M)	Variable capacitor mtg	Sylvania 55428-1
H-114	1600	287726002	COVER, connector: molded red bakelite; $1\frac{9}{32}$″ x $\frac{5}{16}$″ thk; $1\frac{1}{8}$″ -24 inside thd; (straight knurl; marked "CAUTION HIGH VOLTAGE"; assembled with 2″ chain). (AF Part No. 2Z3352.89)	Covers P-101	Sylvania 55620-1
H-115	1600	287726001	COVER, connector: molded black bakelite; $1\frac{9}{32}$″ dia x $\frac{5}{16}$″ thk; (screws on connector threaded $1\frac{1}{8}$″ -24; straight knurl). (AF Part No. 2Z3352.88)	Covers P-103	Sylvania 56175-1
H-116 (Used on ARC-3 and ARC-36 only)	1600	287725994	COVER, relay contacts: Al, caustic dipped; 6″ lg x $\frac{7}{8}$″ wd x $\frac{1}{8}$″ thk; (marked "DO NOT BURNISH RELAY CONTACTS WHEN POWER IS ON"; has neoprene gasket; 2 No. 6-32 captive mtg screws on 3″ mtg/c). (AF Part No. 2Z3352.81)	Covers crystal relay	Sylvania 55613-1
H-117	1600	287725998	COVER, relay contacts: Al, caustic-dipped; $6\frac{3}{16}$″ lg x $\frac{23}{32}$″ wd x $\frac{7}{64}$″ thk; (marked "DO NOT BURNISH RELAY CONTACTS WHEN POWER IS ON"; has neoprene gasket; 2 mtg holes $\frac{11}{64}$″ dia on $5\frac{13}{16}$″ mtg/c). (AF Part No. 2Z3352.85)	Covers starting relay contacts	Sylvania 55660-1
H-118 (Used on ARC-3 only)	1600	287725996	COVER, crystal: Al, caustic-dipped; $6\frac{17}{32}$″ lg x $5\frac{9}{16}$″ wd x $1\frac{3}{8}$″ thk overall; (mtd with hinge containing 2 captive fasteners on $4\frac{7}{16}$″ mtg/c; louvered; winged fastener; 8 retaining springs). (AF Part No. 2Z3352.83)	Covers crystal compartment	Sylvania 55661-1
H-119*			COVER, tube; Al, caustic-dipped; $6\frac{1}{2}$″ lg x $5\frac{3}{8}$″ wd x $\frac{1}{32}$″ thk; (marked "CAUTION—HIGH VOLTAGE—TURN OFF POWER BEFORE REMOVING THIS COVER"; 4 captive fasteners on $3\frac{1}{4}$″ x 6″ mtg/c).	Covers V-103	Sylvania 55599-1
H-120	3300	287178296	CLAMP ASSEMBLY, tube: beryllium copper spring mounted on CRS bracket; cad pl; overall dimension of bracket $\frac{7}{8}$″ lg x $\frac{9}{16}$″ wd x $1\frac{1}{2}$″ h; 1 mtg hole $\frac{11}{64}$″ dia; (knurled thumb screw for clamping spring; marked "CLAMP TUBE BEFORE ALIGNING"). (AF Part No. 2Z2642.76)	Clamps tube V-103	Sylvania 56416-1

H-121	3370	096400-3245	CLAMP ASSEMBLY, tube: beryllium copper spring mounted on CRS bracket; cad pl; overall dimension of bracket $2\frac{11}{16}$" lg x $\frac{25}{32}$" wd x 2" h; 2 mtg holes $\frac{11}{64}$" dia on $1\frac{29}{32}$" mtg/c; (knurled thumb screw for clamping spring; marked "CLAMP TUBE BEFORE ALIGNING"). (AF Part No. 2Z2636-103)	Clamps tube V-104	Sylvania 56418-1
H-122 to H-133	6500	916589	FASTENER: Dzus; steel, heat treated, cad pl; $\frac{3}{8}$" lg; $\frac{5}{16}$" dia slotted head; $\frac{3}{16}$" dia body; 0.250" from head to cam. (AF Part No. 6Z3809-7)	Secures covers	Sylvania 55628-2 Dzus type A3-25
H-134 to H-145	6500	914701	SPRING, Dzus: 0.045" dia music wire; $\frac{15}{16}$" lg x $\frac{1}{4}$" wd x 0.175" h; $\frac{5}{8}$" mtg/c. (AF Part No. 6Z3809-15)	Locks fastener	Sylvania 55650-2 Dzus S3-175
H-146	6500	914702-3	SPRING, Dzus: 0.062" dia music wire; cad pl; $1\frac{1}{8}$" lg x $\frac{3}{8}$" wd x 0.200" h; $\frac{3}{4}$" mtg/c. (AF Part No. 2ZK4318-4)	Locks fastener	Sylvania 55615-1 Dzus S4-200
H-147 to H-152	1600	291492877	FASTENER ASSEMBLY: c/o Dzus fastener and phosphor bronze spring; 2" lg x $\frac{5}{16}$" wd x $\frac{1}{64}$" thk; (has 2 mtg holes 0.098" dia on $\frac{5}{16}$" mtg/c). (AF Part No. 2Z4308-10)	Secures top cover	Sylvania 55627-1
J-101*			CONNECTOR, female contact: 1 round female contact $\frac{5}{8}$" dia x $\frac{5}{8}$" h; (1 amp RF; cylindrical zinc body, cad pl; molded black bakelite insert; $\frac{5}{8}$"-24 thread for mtg); integral part of K-101.	Receiver ant connector (PL-259)	Sylvania 55790-1
J-102*			CONNECTOR, female: same as J-101; integral part of K-101.	Ant connector	Sylvania 55790-1
K-101	3380	552520-4495	RELAY, antenna: solenoid; SPDT; $2\frac{7}{8}$" lg x $1\frac{13}{16}$" wd x $2\frac{5}{32}$" thk approx overall; (16 ga palladium contacts; contact rating 1 amp RF; single wound coil 14 v dc, 51 ma, 275 ohms; two SO-239 connectors molded into shell; coil impregnated for tropical use; mtd by thd bushings on connectors; $\frac{5}{8}$"-24 thd on 2" mtg/c); includes connectors J-101 and J-102. (AF Part No. 2Z7585-115)	Ant switching	Sylvania 55476-1 Weco ESO-693695
K-102	3380	555120-7335	RELAY, solenoid: DPST; normally open; $1\frac{7}{16}$" lg x $1\frac{15}{32}$" wd x $\frac{59}{64}$" thk overall; (16 ga palladium contacts; contact rating 200 v dc, 2 amp; single wound coil, 14 v dc, 50 ma, 280 ohms; coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on $\frac{3}{4}$" mtg/c). (AF Part No. 2Z7589-101)	B voltage switching	Sylvania 55589-1 Cookeco 489
K-103	3380	512380-1725	RELAY, sensitive: solenoid; SPST, normally open; Al can, $1\frac{7}{8}$" dia x $2\frac{1}{32}$" h overall; (16 ga palladium contacts; rated 28 v dc, 0.85 amp; single wound coil, 10 v dc 4 ma, 2,500 ohms; hermetically sealed; 5 pin plug-in mtg). (AF Part No. 2Z7585-114)	Tuning control	Sylvania 55585-1 Cookeco 485

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TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
K-104	3380	555120-6185	RELAY, solenoid: 2 contact piles, 1C1A and 2A; $1\frac{7}{16}$″ lg x $1\frac{15}{32}$″ h x $\frac{15}{16}$″ max thk overall; (16 ga palladium contacts; 28 v dc, 2 amp; single wound coil, 14 v dc, 93 ma, 150 ohms; coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on ¾″ mtg/c). (AF Part No. 2Z7588-86)	Motor switching	Sylvania 55530-1 Cookeco 430
K-105*			COIL, solenoid: relay; single winding; 14 v dc; 275 ma, 55 ohms; 1⅜″ lg x ½″ ID x 1.073″ OD; (500 v dc insulation test); part of O-102.	Clutch-brake solenoid	Sylvania 56139-1
K-106	3380	555120-5765	RELAY, solenoid: 2 contact piles, both 1C1A; $1\frac{7}{16}$″ lg x $1\frac{15}{32}$″ h x $\frac{15}{16}$″ max thk overall; (16 ga palladium contacts; rated 28 v dc, 2 amp; single wound coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on ¾″ mtg/c; 14 v dc, 93 ma, 150 ohms). (AF Part No. 2Z7588-85)	Tone osc switching	Sylvania 55531-1 Cookeco 431
K-107†	3380	555120-9645	RELAY, solenoid: general purpose; 2 contact piles, both 3A; $1\frac{7}{16}$″ lg x $1\frac{15}{32}$″ h x $\frac{15}{16}$″ max thk overall; (16 ga palladium contacts; 28 v dc, 2 amp; single wound coil, 14 v dc, 93 ma, 150 ohms; coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on ¾″ mtg/c). (AF Part No. 2Z7594-3)	Tuning system starting	Sylvania 55528-1 Cookeco 428
K-108†	3380	555120-9645	RELAY, solenoid: same as K-107	Tuning system starting	Sylvania 55528-1 Cookeco 428
K-109†	3380	701765-1915	RELAY, Crystal: solenoid; 1C1A; 1 low capacity section; $1\frac{7}{16}$″ lg x $1\frac{15}{32}$″ h x $\frac{57}{64}$″ thk overall; (16 ga. palladium contacts; rated 200 v dc, 2 amp; single wound coil, 14 v dc, 50 ma, 280 ohms; coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on ¾″ mtg/c). (AF Part No. 2Z7585-117)	Channel "H" xtal switching	Sylvania 55526-1 Cookeco 426
K-110†	3380	701765-1915	RELAY, Crystal: same as K-109	Channel "F" xtal switching	Sylvania 55526-1 Cookeco 426
K-111†	3380	701765-1915	RELAY, Crystal: same as K-109	Channel "D" xtal switching	Sylvania 55526-1 Cookeco 426
K-112†	3380	701765-1915	RELAY, Crystal: same as K-109	Channel "B" xtal switching	Sylvania 55526-1 Cookeco 426

K-113†	3380	701765-1915	RELAY, Crystal: same as K-109	Channel "A" xtal switching	Sylvania 55526-1 Cookeco 426
K-114†	3380	701765-1915	RELAY, Crystal: same as K-109	Channel "C" xtal switching	Sylvania 55526-1 Cookeco 426
K-115†	3380	701765-1915	RELAY, Crystal: same as K-109	Channel "E" xtal switching	Sylvania 55526-1 Cookeco 426
K-116†	3380	701765-1915	RELAY, Crystal: same as K-109	Channel "G" xtal switching	Sylvania 55526-1 Cookeco 426
K-117††	3380	555120-6185	RELAY, solenoid: same as K-104	Tuning system starting	Sylvania 55530-1 Cookeco 430
K-118††	3380	555120-4735	RELAY, solenoid: SPDT; special fast action $1\frac{7}{16}''$ lg x $\frac{57}{64}''$ wd x $1\frac{15}{32}''$ h overall; (16 ga palladium contacts, rated 28 v dc, 100 ma; single wound coil; 14 v dc, 50 ma, 280 ohms; 2 mtg holes tapped No. 4-40 on $\frac{47}{64}''$ mtg/c). (AF Part No. 2Z7585-111)	Side tone starting	Sylvania 55836-1
L-101	3340	310004995	COIL, RF: choke; single winding; 5 pie universal wound; unshielded; 2.5 mh, 125 ma; 45 ohms; distributed capacity 2 mmf; $1\frac{7}{16}''$ max lg x $\frac{1}{2}''$ max dia overall; (ceramic form; 2 radial wire leads, $1\frac{5}{16}''$ lg; impregnated for tropical use). (AF Part No. 3C323-129B)	Osc grid choke	Sylvania 55689-1
L-102	3340	310004995	COIL, RF: same as L-101	Osc cathode choke	Sylvania 55689-1
L-103	3340	310004997	COIL, RF: tuning; single winding; single layer wound; unshielded; $8\frac{1}{2}$ turns No. 20 AWG wire; $1\frac{21}{32}''$ lg x $\frac{11}{16}''$ dia; (molded bakelite form, air core; 2 mtg holes 0.145″ dia on 1″ mtg/c; 2 brass term. molded into side of form; impregnated for tropical use). (AF Part No. 3C323-129D)	Osc plate tuning	Sylvania 55705-1
L-104	3340	307744000	COIL, RF: choke; single winding; single layer wound; unshielded; 2 uh; 1 amp; $1\frac{3}{4}''$ lg x $\frac{9}{32}''$ dia overall; (ceramic form, air core; 2 pigtail leads $1\frac{5}{8}''$ lg; coated with red vinyl lacquer). (AF Part No. 3C336-11)	1st harmonic gen plate choke	Sylvania 55679-1 Ohmite Z-O
L-105*			COIL, RF: tuning; single winding, single layer wound; unshielded; 11 turns No. 12 silver-plated wire; $1\frac{1}{2}''$ lg x $\frac{5}{8}''$ diam overall; (no form, 3 solder lug terminals strapped to coil); part of Z-102.	2nd harmonic gen grid tuning	Sylvania 55503-1
L-106*			COIL, RF; tuning; single winding, single layer wound; unshielded; 3 turns No. 12 silver-plated wire; $1\frac{7}{16}''$ lg x $\frac{5}{8}''$ diam overall; (no form; 3 solder lug terminals strapped to coil); part of Z-103.	2nd harmonic gen plate tuning	Sylvania 55537-1

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* Not available as a spare part, listed for reference only.
† Used on ARC-3 and ARC-36 only.
†† Used only on Radio Transmitter T-67/ARC-3 and T-312/ARC-36 with "M-3" Modification, T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, and T-312B/ARC-36.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
L-107	3340	307744000	COIL, RF: same as L-104	Power amplr grid choke	Sylvania 55679-1 Ohmite Z-O
L-108	3340	307744000	COIL, RF; same as L-104	Power amplr grid choke	Sylvania 55679-1 Ohmite Z-O
L-109*			COIL, RF: tuning; single winding, single layer wound in 2 sections; unshielded; 4 turns No. 10 silver-plated wire; $1\frac{1}{4}$" lg x $\frac{11}{16}$" dia overall; (no form, 3 solder lugs strapped to coil); part of Z-104.	Power amplr plate tuning	Sylvania 55507-1
L-110	3340	310020004	COIL ASSEMBLY, RF; antenna; single winding; single layer wound; unshielded; 1 turn No. 10 AWG silver-plated wire; 3" lg x $\frac{5}{16}$" wd x $\frac{9}{16}$" dia; (mtg data: gear rack molded into black bakelite term. board, moveable slide; 2 double lug type term., 1 on either side of term. board; 1 turn, coil mtg horizontal to term. board). (AF Part No 3C323-129L)	Ant coupling	Sylvania 56468-1
L-111	3340	310004995	COIL, RF: same as L-101	Power amplr plate choke	Sylvania 55689-1
L-112	3340	310004995	COIL, RF: same as L-101	2nd harmonic gen plate choke	Sylvania 55689-1
O-101	1600	286664066	CAM, switch: molded black bakelite; $1\frac{3}{8}$" dia x $\frac{3}{32}$" thk; $\frac{13}{16}$" dia overall; (calibrated in freq from "100" to "156"; metal bushing for mtg on $\frac{5}{16}$" shaft w/2 No. 6-32 set screws; projecting metal roller). (AF Part No. 2Z1600-16)	Actuates S-101A and S-101B	Sylvania 55506-1
O-102	1600	298320058	DRIVE ASSEMBLY, tuning: Al casting; natural finish; 28 v dc, $\frac{1}{2}$ amp; $4\frac{1}{16}$" lg x $2\frac{3}{8}$" wd x $5\frac{1}{4}$" h overall; 6 mtg holes tapped No. 8-32 thd on $1\frac{7}{8}$" x $1\frac{7}{16}$" x $1\frac{43}{64}$" mtg/c; (includes B-101 and K-105; has magnetic clutch and brake). (AF Part No. 2Z3876.66)	Tuning drive	Sylvania 56100-1
O-103	1600	291619839	GEAR ASSEMBLY, worm: steel, cad pl; $1\frac{13}{16}$" lg x $\frac{7}{8}$" wd x $\frac{3}{4}$" h overall; shaft $\frac{5}{32}$" dia x $1\frac{15}{32}$" lg; 15 threads per inch; (Mtg bracket contains 2 holes $\frac{11}{64}$" mtg/c). (AF Part No. 2Z4875-47)	Rear capacitor drive	Sylvania 55467-1

O-104	1600	291619838	GEAR ASSEMBLY, worm; steel, cad pl; 2" lg x 7/8" wd x 3/4" h overall; shaft 5/32" dia. x 9/32" lg; 15 threads per inch; (mtg bracket contains 2 holes 5/32" dia on 13/16" mtg/c; has slotted coupling arm). (AF Part No. 2Z4875-46)	Front capacitor drive	Sylvania 55469-1
O-105	1600	291619835	WORM, gear: CRS; cad pl; split gear, each sect 1.35" dia x 1/32" thk x 3/8" d overall; (metal bushing for mtg on 5/16" shaft w/2 No. 6-32 set screws; has a back lash spring). (AF Part No. 2Z4875-43)	Rear capacitor drive	Sylvania 55495-1
O-106	1600	291619835	WORM, gear: same as O-105	Front capacitor drive	Sylvania 55495-1
P-101*	8850	668021	CONNECTOR, male contact: straight; 8 banana type contacts; 1 5/16" dia x 45/64" h overall; (cylindrical Al body; mica insert; 1 1/8"-24 thd for mtg; supplied with mtg nut). (AF Part No. 2Z7226-152)	Test set connector (PL-152)	Sylvania 55670-1
P-102	8850	588880	CONNECTOR, male contact: 16 banana type contacts; 1 13/16" dia x 45/64" h overall; (cylindrical Al body; molded black bakelite insert; 1 5/8"-24 thd for mtg; 15/32" lg; supplied with mtg nut). (AF Part No. 2Z8800-41)	Power junction box connector (U-15/U)	Sylvania 55494-1
P-103	8850	663381	CONNECTOR, male contact: 6 banana type contacts; 1 5/16" x 45/64" h overall; (cylindrical Al body; molded bakelite insert; 1 1/8"-24 thd for mtg; 15/32" lg; supplied with mtg nut). (AF Part No. 2Z8799-166)	Tone osc switch connector (PL-151-A)	Sylvania 56176-1
R-101	3350	131000-4591	RESISTOR, fixed: composition; 5100 ohms ±5%; 1 watt (AF Part No. 3RC30BF512J)	Osc grid leak	JAN RC30AF512J
R-102 (Used on ARC-3 and ARC-36 only)	3350	101000-1391	RESISTOR, fixed: composition; 18 ohms ±5%; 1/2 watt (AF Part No. 3RC20BF180J)	Osc grid meter shunt	JAN RC20AF180J
R-103 (Used on ARC-3 and ARC-36 only)	3350	131000-2351	RESISTOR, fixed: composition; 100 ohms ±10%; 1 watt (AF Part No. 3RC30AF101K)	Osc cathode bias	JAN RC30AF101K
R-104	3350	381518180	RESISTOR, fixed: composition; 220,000 ohms ±10%; 2 watt (AF Part No. 3RC40BF224K)	Osc screen voltage dropping	JAN RC40AF224K
R-104†	3350	169000-5871	RESISTOR, fixed: composition; 47,000 ohms ±10%; 2 watt (AF Part No. 3RC40BF473K)	Osc screen voltage dropping	JAN RC40AF473K
R-105†	3350	381518180	RESISTOR, fixed: same as R-104	Osc screen voltage dropping	JAN RC40AF224K
R-105	3350	169000-5871	RESISTOR, fixed: same as R-104†	Osc screen voltage dropping	JAN RC40AF473K

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* Not available as a spare part, listed for reference only.

† Used only on Radio Transmitters T-67/ARC-3 and T-312/ARC-36 prior to "M-1" modification.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
R-106	3350	101000-5131	RESISTOR, fixed: composition; 10,000 ohms ±10% 1 watt (AF Part No. 3RC30BF103K)	1st harmonic gen grid leak	JAN RC30AF103K
R-107	3350	169000-5871	RESISTOR, fixed: composition; 47,000 ohms ±10%; 2 watt (AF Part No. 3RC40BF473K)	1st harmonic gen grid leak	JAN RC40AF473K
R-108 (Used on ARC-3 and ARC-36 only)	3350	381169240	RESISTOR, fixed: composition; 39 ohms ±5%; ½ watt. (AF Part No. 3RC20BF390J)	1st harmonic gen grid meter shunt	JAN RC20AF390J
R-109	3350	703000-4116	RESISTOR, fixed: wire wound; 2 windings on one form; 450 ohms ±5% and 37 ohms ±5%; 5 watts per section; 1¾″ lg x $\frac{5}{16}$″ dia; (vitreous enamel insulation; ceramic core; 3 terminals; $\frac{7}{16}$″ max lg). (AF Part No. 3Z6045-31)		Sylvania 55652-1 Utahrad X-1369
R-109A			RESISTOR, fixed: part of R-109; 450 ohm section.	1st harmonic gen cathode bias	Sylvania 55652-1
R-109B			RESISTOR, fixed: part of R-109; 37 ohm section.	Sidetone transf load	Sylvania 55652-1
R-110	3350	169000-4571	RESISTOR, fixed: composition; 10,000 ohms ±10%; 2 watt. (AF Part No. 3RC40BF103K)	1st harmonic gen screen voltage dropping	JAN RC40AF103K
R-111	3350	516500-2915	RESISTOR, fixed: wire wound; 2200 ohms ±5%; 10 watt; 1¾″ lg x $\frac{5}{16}$″ dia; (vitreous enamel insulation; ceramic core; 2 terms; $\frac{15}{32}$″ max lg). (AF Part No. 3Z5422-2)	1st harmonic gen plate voltage dropping	Sylvania 55656-3 Utahrad X-1363
R-112	3350	169000-5351	RESISTOR, fixed: composition; 22,000 ohms ±10%; 2 watt. (AF Part No. 3RC40BF223K)	2nd harmonic gen grid leak	JAN RC40AF223K
R-113 (Used on ARC-3 and ARC-36 only)	3350	101000-1421	RESISTOR, fixed: composition; 22 ohms ±5%; ½ watt. (AF Part No. 3RC20BF220J)	2nd harmonic gen grid meter shunt	JAN RC20AF220J
R-114	3350	131000-4591	RESISTOR, fixed: same as R-101	Voltage divider	JAN RC30AF512J
R-115	3350	169000-4571	RESISTOR, fixed: same as R-110	Voltage divider	JAN RC40AF103K
R-116	3350	516000-4991	RESISTOR, fixed: wire wound; 1000 ohms ±5%; 10 watt; 1¾″ lg x $\frac{5}{16}$″ dia; (vitreous enamel insulation; ceramic core; 2 wire leads; 2″ lg). (AF Part No. 3Z6100-203)	2nd harmonic gen cathode bias	Sylvania 55717-1 Utahrad X-1362

R-117	3350	169000-6751	RESISTOR, fixed: composition; 100,000 ohms ±10%; 2 watt. (AF Part No. 3RC40BF104K)	Control tube screen voltage divider	JAN RC40AF104K
R-118	3350	169000-6751	RESISTOR, fixed: same as R-117	Control tube screen voltage divider	JAN RC40AF104K
R-119	3350	131000-5491	RESISTOR, fixed: composition; 18,000 ohms ±10%; 1 watt. (AF Part No. 3RC30BF183K)	2nd harmonic gen screen voltage dropping	JAN RC30AF183K
R-120	3350	169000-5591	RESISTOR, fixed: composition; 33,000 ohms ±10%; 2 watt. (AF Part No. 3RC40BF333K)	2nd harmonic gen screen voltage dropping	JAN RC40AF333K
R-121	3350	101000-5141	RESISTOR, fixed: composition; 47,000 ohms ±20%; ½ watt. (AF Part No. 3RC20BF473M)	Control tube grid filter	JAN RC20AF473M
R-122	3350	146000-2357	RESISTOR, fixed: composition; 120 ohms ±10%; 2 watt. (AF Part No. 3RC40BF121K)	2nd harmonic gen plate series	JAN RC40AF121K
R-123	3350	101000-1421	RESISTOR, fixed: same as R-113.	Power amplr grid meter shunt	JAN RC20AF220J
R-124	3350	793000-2446	RESISTOR, variable: carbon; 10,000 ohms ±20%; ½ watt; 3 terminals; body 1¼″ dia x 9/16″ thk; shaft ¼″ dia x ½″ lg; (linear taper; enclosed body; bushing ⅜″-32 x ⅜″ lg; screwdriver slot). (AF Part No. 2Z7269.16)	Control tube bias control and power amplr grid leak	Sylvania 55588-1 AV J6858
R-125	3350	702000-4621	RESISTOR, fixed: wire wound; 2 windings on one form; 275 ohms ±5% and 250 ohms ±5%; 5 watts per section; 1¾″ lg x 5/16″ max dia; (vitreous enamel insulation; ceramic core; 3 terminals; 7/16″ max lg). (AF Part No. 3Z6052E5-1)		Sylvania 55652-3 Utahrad X-1370
R-125A			RESISTOR, fixed: part of R-125; 275 ohm section.	Power amplr cathode bias	Sylvania 55652-3
R-125B			RESISTOR, fixed: part of R-125; 250 ohm section.	Mod cathode bias	Sylvania 55652-3
R-126	3350	101000-6321	RESISTOR, fixed: composition; 560,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF564J)	Cathode meter series	JAN RC20AF564J
R-127	3350	169000-6211	RESISTOR, fixed: composition; 68,000 ohms ±10%; 2 watt. (AF Part No. 3RC40BF683K)	Power amplr screen voltage dropping	JAN RC40AF683K
R-128	3350	169000-6211	RESISTOR, fixed: same as R-127	Power amplr screen voltage dropping	JAN RC40AF683K
R-129	3350	516500-2155	RESISTOR, fixed: wire wound; 15 ohms ±5%; 10 watt; 1¾″ lg x 5/16″ dia; (vitreous enamel insulation; ceramic core; 2 term.; 15/32″ max lg). (AF Part No. 3Z4815.7)	Osc heater shunt	Sylvania 55656-1

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
R-130	3350	516500-2155	RESISTOR, fixed: same as R-129	1st harmonic gen heater shunt	Sylvania 55656-1
R-131	3350	516500-2155	RESISTOR, fixed: same as R-129	Sidetone heater voltage dropping	Sylvania 55656-1
R-132	3350	701000-4171	RESISTOR, fixed: wire wound; 2 windings on one form; 37 ohms ±5% and 10½ ohms ±7.5%; 5 watts per section; 1¾" lg x $\frac{5}{16}$" dia; (vitreous enamel insulation; ceramic core; 3 terminals; $\frac{7}{16}$" max lg). (AF Part No. 3Z6003G7-2)		Sylvania 55652-2 Utahrad X-1364
R-132A			RESISTOR, fixed: part of R-132; 37 ohm section.	Speech amplr heater shunt	Sylvania 55652-2
R-132B			RESISTOR, fixed: part of R-132; 10½ ohm section.	Speech amplr heater voltage dropping	Sylvania 55652-2
R-133	3350	493000-1466	RESISTOR, fixed: wire wound; 82 ohms ±5%; 4 watt; 1" lg x $\frac{5}{16}$" dia; (vitreous enamel insulation; ceramic core; 2 term.; $\frac{15}{32}$" max lg). (AF Part No. 3Z4882)	Control tube heater voltage dropping	Sylvania 55653-1 Utahrad X-1365
R-134	3350	101000-4451	RESISTOR, fixed: composition; 10,000 ohms ±20%; ½ watt. (AF Part No. 3RC20BF103M)	Control tube grid isolating	JAN RC20AF103M
R-135	3350	131000-1551	RESISTOR, fixed: composition; 22 ohms ±20%; 1 watt. (AF Part No. 3RC30BF220M)	Clutch-brake solenoid arc suppressor	JAN RC30AF220M
R-136†	3350	101000-5761	RESISTOR, fixed: composition; 220,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF224K)	Tone osc transf shunt	JAN RC20AF224K
R-136	3350	381169360	RESISTOR, fixed: composition; 39,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF393J)	Tone osc transf shunt	JAN RC20AF393J
R-136††	3350	099000-5471	RESISTOR, fixed: composition; 68,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF683J)	Tone osc transf shunt	JAN RC20AF683J
R-137	3350	101000-4911	RESISTOR, fixed: composition; 33,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF333K)	Tone osc grid leak	JAN RC20AF333K
R-138	3350	131000-3551	RESISTOR, fixed: composition; 1000 ohms ±10%; 1 watt. (AF Part No. 3RC30BF102K)	Speech amplr cathode	JAN RC30AF102K

R-138†††	3350	128000-3835	RESISTOR, fixed: composition; 1000 ohms ±5%; 1 watt. (AF Part No. 3RC30BF102J)	Speech amplr cathode	JAN RC30AF102J
R-139†	3350	098000-4231	RESISTOR, fixed: composition; 6800 ohms ±5%; ½ watt. (AF Part No. 3RC20BF682J)	Tone osc sidetone output shunt	JAN RC20AF682J
R-139	3350	098000-4471	RESISTOR, fixed: composition; 12,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF123J)	Tone osc sidetone output shunt	JAN RC20AF123J
R-139††	3350	101000-4481	RESISTOR, fixed: composition; 9100 ohms ±5%; ½ watt. (AF Part No. 3RC20BF912J)	Tone osc sidetone output shunt	JAN RC20AF912J
R-140	3350	099000-5471	RESISTOR, fixed: composition; 68,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF683J)	Sidetone voltage divider	JAN RC20AF683J
R-141	3350	101000-5211	RESISTOR, fixed: composition; 51,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF513J)	Altitude gain zero	JAN RC20AF513J
R-142	3350	783550-8511	RESISTOR, variable: carbon; 140,000 ohms ±10%; ½ watt; 3 terminals; body $2\frac{9}{16}''$ sq x 4″ h; (linear taper; enclosed body; 2 holes tapped No. 8-32 in base on $1\frac{1}{8}''$ mtg/c; control is coupled to an aneroid chamber; setting automatically varies with altitude). (AF Part No. 3Z7484)	Altitude gain control	Sylvania 55586 Cookeco 313-1879
R-143	3350	101000-6221	RESISTOR, fixed: composition; 470,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF474J)	Sidetone degeneration	JAN RC20AF474J
R-144	3350	492000-3939	RESISTOR, fixed: wire wound; 500 ohms ±10%; 5 watt; 1″ lg x $\frac{5}{16}''$ dia; (vitreous enamel insulation; ceramic core; 2 term.; $\frac{15}{32}''$ max lg). (AF Part No. 3Z5350-17)	Sidetone amplr cathode bias	Sylvania 55653-3 Utahrad X-1384
R-145	3350	101000-5621	RESISTOR, fixed: composition; 150,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF154J)	Sidetone voltage divider	JAN RC20AF154J
R-146	3350	505000-4231	RESISTOR, fixed: wire wound; 200 ohms ±5%; 5 watt; 1″ lg x $\frac{5}{16}''$ dia; (vitreous enamel insulation; ceramic core; 2 term; $\frac{15}{32}''$ max lg). (AF Part No. 3Z5000-14)	Mic current limiter	JAN RW30G201J
R-147	3350	536000-2728	RESISTOR, fixed: wire wound; 4000 ohms ±5%; 20 watt; 2″ lg x $\frac{9}{16}''$ max dia; (vitreous enamel insulation; ceramic core; 2 term; $\frac{15}{32}''$ max lg). (AF Part No. 3Z5540.17)	B+ voltage dropping	Sylvania 55703-1 Utahrad X-1368
R-148	3350	505000-3261	RESISTOR, fixed: wire wound; 100 ohms ±5%; 5 watt; 1″ lg x $\frac{5}{16}''$ dia; (vitreous enamel insulation; ceramic core; 2 term; $\frac{15}{32}''$ lg). (AF Part No. 3RW18314)		JAN RW30G101J
R-149	3350	381155360	RESISTOR, fixed: composition; 10 ohms, ±20%; ½ watt. (AF Part No. 3RC20AF100M)	1st harmonic gen grid isolating	JAN RC20AF100M

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† These values used only in early production of Radio Transmitters T-67/ARC-3 and T-312/ARC-36.
†† These parts used on AN/ARC-3 and AN/ARC-36 Transmitters with Serial Nos. B-6350 and higher, and on T-452/ARC-49.
††† These parts used on AN/ARC-3 and AN/ARC-36 Transmitters with Serial Nos. B-4770 and higher, and on T-452/ARC-49.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
R-149†	3350	131000-1671	RESISTOR, fixed: composition; 33 ohms ±5%; 1 watt; 0.718" lg x .280" dia; bakelite insulation; 2 axial wire leads; 1½" lg. (AF Part No. 3RC30BF330J)	1st harmonic gen grid isolating	JAN RC30AF330J
R-150††	3350	131000-3551	RESISTOR, fixed: same as R-138.	Control tube cathode	JAN RC30AF102K
R-151†††	3350	099000-1471	RESISTOR, fixed: composition; 56 ohms ±5%; ½ watt. (AF Part No. 3RC20BF560J)	Intercom input	JAN RC20AF560J
R-152★	3350	099000-2751	RESISTOR, fixed: composition; 1000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF102K)	Speech amplr grid insulating	JAN RC20AF102K
R-153★	3350	101000-2181	RESISTOR, fixed: composition; 150 ohms ±5%; ½ watt. (AF Part No. 3RC20BF151J)	Intercom input	JAN RC20GF151J
S-101★★			CONTACT ASSEMBLY, switch: brass, silver pl; 2 pile-ups ea SPST, normally closed; 2⅛" lg x $2\frac{7}{16}$" wd x $\frac{35}{64}$" h overall; (consists of arm and contact assy; assy marked "C-134," "C-135," "S-101A," "S-101B"; has an Al plate w/2 mtg slots $\frac{3}{16}$" wd on $1\frac{45}{64}$" mtg/c; 4 solder lug term.). (AF Part No. 2Z3191-57)		Sylvania 55484-1
S-101A★★			CONTACT ASSEMBLY, switch: part of S-101.	Motor stopping switch	Sylvania 55484-1
S-101B★★			CONTACT ASSEMBLY, switch: part of S-101.	Starting relay switch	Sylvania 55484-1
S-101††	3360	287387616	CONTACT ASSEMBLY, switch: 2 pile-ups, SPST and SPDT; beryllium copper, silver pl; 2⅛" lg x $2\frac{7}{16}$" wd x $\frac{35}{64}$" h overall; (consists of arm and contact assembly; marked "C-134," "C-135," "S-101A," and "S-101B"; has an Al plate w/2 mtg slots $\frac{3}{16}$" wd on $1\frac{45}{64}$" mtg/c; has 5 solder lug type term).		Sylvania 56961-1
S-101A††			CONTACT ASSEMBLY, switch: part of S-101.	Motor stopping switch	Sylvania 56961-1
S-101B††			CONTACT ASSEMBLY, switch: Part of S-101.	Starting relay switch	Sylvania 56961-1 Sylvania 66477-1
S-101★★★	3360	071150010	CONTACT ASSEMBLY, switch: 2 pile-ups, SPST and SPDT; beryllium copper, silver pl; $2\frac{7}{16}$" lg x 2½" wd x $\frac{15}{16}$" h overall; (consists of arm and contact assembly; marked "C-134," "C-135," "S-101A," and "S-101B"; has an Al plate w/2 mtg slots $\frac{3}{16}$" wd on $1\frac{45}{64}$" mtg/c; has 5 solder lug type term.).		
S-101A★★★			CONTACT ASSEMBLY, switch: Part of S-101.	Motor stopping switch	Sylvania 66477-1
S-101B★★★			CONTACT ASSEMBLY, switch: Part of S-101.	Stopping relay switch	Sylvania 66477-1

S-102	3360	395323390	SWITCH, push: SPST; single sect; bakelite body; 1 15/16″ lg x ¾″ dia overall; (2 amp, 32 v dc; non-locking momentary action, normally open; mts by bushing with ⅜″-32 x ⅜″ thd; 2 solder lug term). (AF Part No. 3Z9824-83)	Motor switch	Sylvania 55319-1 Stackpole CT
S-103★			SWITCH, rotary: DPDT; single section; bakelite body; 1 13/32″ lg x 1 5/64″ wd x ¾″ h overall; (⅜″-32 threaded bushing ¼″ lg for mtg; 4 solder lug term.).	Audio input switch	Sylvania 69502-1
T-101	3340	297048772	TRANSFORMER, AF: tone osc; auto transf; Al can; 1″ dia x 1¼″ h; 3 turret type term.; bracket mtg with 2 holes 5/32″ dia on 1 5/16″ mtg/c; impregnated for tropical use; 90 ohms max res term 1 to 2; 220 ohms max res term 2 to 3; turns ratio pri to secd 1.42 to 1; freq 850 to 1150 cps. (AF Part No. 2Z9638-42)	Tone osc	Sylvania 55548-1 Acme Elect T-7704
T-102	3340	297034548	TRANSFORMER, AF: pushpull drive; Al can; 1½″ dia x 1 17/32″ h; 5 turret type term.; 3 mtg holes tapped No. 6-32, 120° spacing on 17/32″ rad; impregnated for tropical use; pri res 1250 ohms max; secd res 650 ohms max; turns ratio, pri to ½ secd, 4.5 to 1. (AF Part No. 2Z9635.25)	Driver	Sylvania 55545-1 Acme Elect T-7701
T-103	3340	296979066	TRANSFORMER, AF: microphone; Al can; 1½″ dia x 1 17/32″ h; 5 turret type term.; 3 mtg holes tapped No. 6-32, 120° spacing on 17/32″ rad; impregnated for tropical use; pri res 9 ohms max either half; secd res 1400 ohms max; turns ratio, secd to ½ pri, 20 to 1. (AF Part No. 2Z9631.246)	Mic input	Sylvania 55546-1 Acme Elect T-7702
T-104	3340	297031755	TRANSFORMER, AF: modulation; brass can; 2″ lg x 1⅞″ wd x 2 11/16″ h; 4 mtg ft with 5/32″ dia holes on 1 7/16″ x 2¼″ mtg/c; 5 solder lug term.; impregnated for tropical use; electrostatic shield between pri and secd; pri res 450 ohms max either half; secd res 270 ohms max; turns ratio, ½ pri to secd, 0.665 to 1. (AF Part No. 2Z9634.93)	Modulator	Sylvania 55547-1 Acme Elect T-7703
T-105	3340	297014665	TRANSFORMER, AF: output; Al can; 1½″ dia x 1 17/32″ h; 5 turret type term.; 3 holes tapped No. 6-32, 120° spacing on 17/32″ rad; impregnated for tropical use; pri res 1300 ohms max; secd res 67 ohms max overall; 3.8 ohms max between term. "LO" and "3"; turns ratio, pri to secd, 9.75 to 1; turns ratio, pri to low impedance tap, 20 to 1. (AF Part No. 2Z9632.348)	Sidetone output	Sylvania 55544-1 Acme Elect T-7700
V-101*	3370	298000-6375	TUBE, electron: (AF Part No. 2J6V6GT/G)	Oscillator	JAN 6V6GT/G

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† Used on late production models of Radio Transmitters T-67B/ARC-3 and T-312B/ARC-36, and on T-452/ARC-49.
†† Used only on Radio Transmitters T-67/ARC-3 and T-312/ARC-36 with "M-3" modification.
††† Used on early models of Radio Transmitters T-67B/ARC-3 and T-312B/ARC-36.
★ Used only on Radio Transmitters T-67B/ARC-3 and T-312B/ARC-36.
★★ Used on early production models of Radio Transmitters T-67/ARC-3 and T-312/ARC-36.
★★★ Used on Radio Transmitters T-67A/ARC-3, T-67B/ARC-3, T-312A/ARC-36, T-312B/ARC-36 and T-452/ARC-49.
* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
V-102*	3370	298000-6375	TUBE, electron: same as V-101.	1st harmonic gen	JAN 6V6GT/G
V-103*	3370	427000-8345	TUBE, electron: (AF Part No. 2J832A)	2nd harmonic gen	JAN 832A
V-104*	3370	427000-8345	TUBE, electron: same as V-103.	Power amplr	JAN 832A
V-105*	3370	286000-1435	TUBE, electron: (AF Part No. 2J12SH7)	Tuning control	JAN 12SH7 or JAN 12SH7GT
V-106*	3370	316000-6325	TUBE, electron: (AF Part No. 2J6J5)	Speech amplr and tone osc	JAN 6J5 or JAN 6J5GT
V-107*	3370	298000-6285	TUBE, electron: (AF Part No. 2J6L6GA)	Modulator	JAN 6L6GA
V-107*†			TUBE, electron:	Modulator	JAN 6L6WGB
V-108*	3370	298000-6285	TUBE, electron: same as V-107.	Modulator	JAN 6L6GA
V-108*†			TUBE, electron: same as V-107†	Modulator	JAN 6L6WGB
V-109*	3370	298000-6375	TUBE, electron: same as V-101.	Sidetone amplr	JAN 6V6GT/G
W-101*			CABLE, RF: Army-Navy Radio Frequency Cable RG-58/U; coaxial; flexible; characteristic impedance 51 ohms; 17¾" lg; single No. 20 AWG solid copper axial conductor; solid dielectric, stabilized polyethylene; (outer conductor single braided copper shield; outer covering vinylite, 0.195" OD; 160 w at 200 mc, 35 w at 3,000 mc).	Ant lead-in	Sylvania 55193
X-101	8850	892385	SOCKET, Tube: 8 contacts; 1 $\frac{5}{32}$" dia x $\frac{25}{32}$" h; octal; ceramic socket w/retaining ring and additional washer added for $\frac{1}{32}$" panel mtg. (AF Part No. 2Z8795.2)	Mounts V-102	Sylvania 55640-1 Amphenol 49-SS8M
X-102	8850	892385	SOCKET, Tube: same as X-101.	Mounts V-101	Sylvania 55640-1 Amphenol 49-SS8M
X-103	8850	883004	SOCKET, Tube: 7 cont, 1" pin circle; above or under chassis wafer mtg; four 0.174" dia mtg holes on 1⅞" sq mtg/c; sq steatite base 2⅜" sq x $\frac{9}{32}$" h excluding term.; steel, cad pl contacts, outside dim. modified. (AF Part No. 2Z8677.137)	Mounts V-103	Sylvania 55489-1 Johnson, E. F. 247A

X-104	8850	883004	SOCKET, Tube: same as X-103.	Mounts V-104	Sylvania 55489-1 Johnson, E. F. 247A
X-105	8850	892385	SOCKET, Tube: same as X-101.	Mounts V-105	Sylvania 55640-1 Amphenol 49-SS8M
X-106	8850	892385	SOCKET, Tube: same as X-101.	Mounts V-106	Sylvania 55640-1 Amphenol 49-SS8M
X-107	8850	892385	SOCKET, Tube: same as X-101.	Mounts V-107	Sylvania 55640-1 Amphenol 49-SS8M
X-108	8850	892385	SOCKET, Tube: same as X-101.	Mounts V-108	Sylvania 55640-1 Amphenol 49-SS8M
X-109	8850	892385	SOCKET, Tube: same as X-101.	Mounts V-109	Sylvania 55640-1 Amphenol 49-SS8M
X-110	8850	879692	SOCKET, Tube: 5 contact; phosphor bronze; mtd in steatite; overall dimen $1\frac{1}{4}''$ dia x $\frac{25}{32}''$; retainer ring mtg. (AF Part No. 2Z8675.13)	Mounts K-103	Sylvania 55641-1 Amphenol 49-SS5M
X-111 (Used on ARC-3 & ARC-36 only)	8850	873020	SOCKET, Crystal: 12 prong; molded black bakelite; $3\frac{23}{64}''$ lg x $2\frac{3}{16}''$ wd x $\frac{11}{64}''$ thk x $\frac{13}{32}''$ h overall; (4 mtg holes $\frac{9}{64}''$ dia on $1\frac{15}{16}''$ x $1\frac{7}{16}''$ vert mtg/c and $1\frac{15}{16}''$ horiz mtg/c; marked "A-B-C-D"). (AF Part No. 2Z8761-36)	Mounts xtals	Sylvania 55553-1 Eby 8093
X-112 (Used on ARC-3 & ARC-36 only)	8850	871800	SOCKET, Crystal: 12 prong; molded black bakelite; $3\frac{23}{64}''$ lg x $2\frac{3}{16}''$ wd x $\frac{11}{64}''$ thk, x $\frac{13}{32}''$ h overall; (4 mtg holes $\frac{9}{64}''$ dia on $1\frac{15}{16}''$ vert mtg/c and $1\frac{15}{16}''$ horiz mtg/c; marked "E-F-G-H"). (AF Part No. 2Z8761-37)	Mounts xtals	Sylvania 55554-1 Eby 8094
Y-101* to Y-108* (Used on ARC-3 only)			CRYSTAL UNIT, quartz: Sig C type CR-1A/AR, DC-11-A, DC-16-A or DC-26-A, 5555 to 8666 kc.	Channel "A-H" crystals	
Z-101	1600	224439610	TUNING ASSEMBLY, RF: osc; 8-114 mmf; $3\frac{3}{8}''$ lg x $2\frac{1}{8}''$ wd x $3''$ h overall; includes C-106, C-107, O-104, O-106; mtg plate w/3 holes $\frac{3}{16}''$ dia on $1\frac{3}{4}''$ x $2\frac{15}{16}''$ mtg/c; screwdriver adjustment which rotates capacitor frame). (AF Part No. 2C8113)	Osc tuning assembly	Sylvania 55607-1
Z-102	1600	224439580	TUNING ASSEMBLY, RF: 1st harm gen 33.3 to 52 mc; $3\frac{3}{8}''$ lg x $2\frac{5}{8}''$ wd x $2\frac{5}{8}''$ h overall; (includes C-115, C-116, and L-105; mtg plate with 3 holes $\frac{3}{16}''$ dia on $1\frac{7}{8}''$ x $2\frac{7}{32}''$ mtg/c; screwdriver adjustment which rotates capacitor frame. (AF Part No. 2C8111)	1st harm gen tuning assembly	Sylvania 55605-1

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* Not available as a spare part, listed for reference only.
† Used on Radio Transmitters with Serial Nos. 20822 and higher.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
Z-103	1600	224439450	TUNING UNIT, RF: 2nd harmonic generator; aluminum can; 100 to 156 mc; $3\frac{5}{16}$″ lg x 3″ wd x $3\frac{1}{16}$″ h overall; (includes C-122, C-123, C-124, E-112, E-160, E-161, L-106, O-103 and O-105; mtg plate with 3 holes $\frac{3}{16}$″ dia on $1\frac{3}{4}$″ x $2\frac{15}{16}$″ mtg/c; screwdriver adj rotates capacitor frame). (AF Part No. 2C8108)	2nd harmonic gen tuning assembly	Sylvania 55608-1
Z-104	1600	224439600	TUNING ASSEMBLY, RF: power amplr; aluminum can; 100 to 156 mc; $3\frac{7}{8}$″ lg x $2\frac{7}{8}$″ wd x 4″ h overall; (includes C-129, C-130, E-116, E-119, E-158, E-159, L-109 and L-110; mtg plate with 3 holes $\frac{3}{16}$″ dia on $1\frac{13}{16}$″ dia x $2\frac{9}{32}$″ mtg/c; screwdriver adjustment which rotates capacitor frame). (AF Part No. 2C8112)	Power amplr tuning assembly	Sylvania 55606-1

MODEL: RADIO SET AN/ARC-36 **MAJOR ASSEMBLY: RADIO TRANSMITTER T-312/ARC-36, Parts Peculiar to T-312 only**

K-1002	3380	511125-9221	RELAY: Auxiliary and Regular Channel Selector; solenoid; 4PDT; $1\frac{13}{64}$″ lg x $\frac{11}{16}$″ wd x $1\frac{11}{64}$″ h approx overall; (16 ga palladium contacts; contact rating 28 v dc 100 ma; single wound coil, 15 v dc, 54 ma, 280 ohms; 4 holes tapped No. 3-48 in base on $\frac{3}{8}$″ mtg/c); p/o UG-613A/U.	Regular or auxiliary channel switching	Sylvania 78660-1
K-1003	3380	511125-9221	RELAY: same as K-1002.	Regular or auxiliary channel switching	Sylvania 78660-1
P-1002	1600	010015000	CONTACT ASSEMBLY: $6\frac{1}{8}$″ lg x $1\frac{3}{8}$″ wd x $2\frac{3}{8}$″ h overall; (c/o 16 pin contact board assembly; 10 solder terminals; K-1002; K-1003); p/o UG-613A/U.	Crystal socket adapter connector	Sylvania 78814-1
X-1004	8850	871754	SOCKET ASSEMBLY: Crystal; 12 prongs; Molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{43}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x $1\frac{3}{8}$″ mtg/c; marked "A - B - C - D"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-3
X-1005	8850	871752	SOCKET ASSEMBLY: Crystal; 12 prongs; Molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{43}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x $1\frac{3}{8}$″ mtg/c; marked "E - F - G - H"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-1
X-1006	8850	871753	SOCKET ASSEMBLY: Crystal; 12 prongs; Molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{43}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x $1\frac{3}{8}$″ mtg/c; marked "A_1 - B_1 - C_1 - D_1"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-2

X-1007	8850	871755	SOCKET ASSEMBLY: Crystal; 12 prongs; Molded black bakelite; 3$\frac{11}{64}$" lg x 1$\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on 1$\frac{9}{16}$" x 1⅜" mtg/c; marked "E_1 - F_1 - G_1 - H_1"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-4
Y-1001* to Y1016*			CRYSTAL UNIT, quartz: same as Y-101.	Channel crystals	

MODEL: RADIO SET AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER T-452/ARC-49, Parts Peculiar to T-452 only**

B-102	3360	073114045	SWITCH, Rotary, Solenoid: 6 wafer; 12 position, silver alloy contacts and rotor blades; phenolic wafers; rear rotor omitted on wafer No. 2; 4$\frac{29}{64}$" lg x 1$\frac{9}{16}$" dia overall; 4 mtg holes $\frac{5}{32}$" dia on 1¼" mtg/c; guide hole $\frac{11}{16}$" dia on mtg plate; non-shorting type rotary contact blades on wafer No. 2 to No. 6; front and rear rotors connected on wafer No. 3 to No. 6; solder lug term.	Selects numbered crystal bank	Sylvania 82976-1
B-103	3360		SWITCH, Rotary, Solenoid: 2 wafer; 12 position; silver alloy contacts and rotors; phenolic wafer; 2$\frac{41}{64}$" lg x 1$\frac{9}{16}$" d overall; 4 mtg holes $\frac{5}{32}$" dia on 1¼" mtg/c; guide hole $\frac{11}{64}$" dia on mtg plate; non-shorting type rotary contact blades on wafer No. 2; wafer No. 1 front and rear rotors connected together; solder lug term.	Selects lettered crystal bank	Sylvania 82977-1
C-102	3330	376051200	CAPACITOR, fixed: mica; 1000 mmf ±2%; 500 vdcw; 1$\frac{1}{16}$" lg x $\frac{7}{16}$" wd x $\frac{3}{16}$" thk; (molded bakelite case; two 1⅛" lg x No. 20 axial wire leads).	Osc feedback and screen bypass	JAN CM25D102G
C-103	3330	056200714	CAPACITOR, fixed: mica; 100 mmf ±2%; 300 vdcw; $\frac{33}{64}$" lg x $\frac{19}{64}$" wd x $\frac{3}{16}$" thk; (molded bakelite case; two 1⅛" lg x No. 22 axial wire leads).	Osc feedback and cathode bypass	JAN CM15C101G
C-152	3330	057251915	CAPACITOR, paper: 470,000 mmf ±20%; 300 vdcw; 1⅞" lg x $\frac{9}{16}$" dia; (metal case; metal bracket ½" x $\frac{7}{16}$"; mtg hole $\frac{5}{32}$" dia; two 3" lg x No. 20 axial wire leads).	Rotary solenoid arc suppressor	Sylvania 82975-1 Sprague P71174
C-153	3330	057251915	CAPACITOR, paper: same as C-152.	Rotary solenoid arc suppressor	Sylvania 82975-1 Sprague P71174
C-154	3330	057251938	CAPACITOR, paper: 100,000 mmf ±20%; 200 vdcw; ⅞" lg x $\frac{13}{32}$" dia; (metal case; metal bracket $\frac{5}{16}$" lg x ¼" wd; $\frac{3}{16}$" dia mtg hole; two 1⅝" lg x No. 20 axial wire leads).	Relay arc suppressor	JAN CP10A1KC104M
H-118	1600	011575005	COVER, Crystal Panel: aluminum, caustic dipped; 7" lg x 4$\frac{53}{64}$" wd x $\frac{15}{16}$" h overall; flange $\frac{11}{32}$" wd x 7" lg one side; ¼" extruded hole in center of flange; 4 holes $\frac{7}{64}$" dia on $\frac{57}{64}$" mtg/c; 2 holes ⅛" dia on 2$\frac{7}{16}$" mtg/c.	Covers crystal compartment	Sylvania 80312-1
K-107	3380	552520-9485	RELAY, Lock-In: solenoid; 2 contact piles, each dpst normally open; 1$\frac{7}{16}$" lg x $\frac{15}{16}$" wd x 1$\frac{11}{32}$" h overall; (16 ga palladium contacts rated 28 vdc 100 ma; single wound coil, 14 vdc 50 ma 280 ohms; 2 mtg holes tapped No. 4-40 on ¾" mtg/c).	Tuning system starting	Sylvania 80924-1

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SET AN/ARC-49 **MAJOR ASSEMBLY: RADIO TRANSMITTER T-452/ARC-49, Parts Peculiar to T-452 only**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
R-102	3350	103000-1476	RESISTOR, composition: fixed, 68 ohms ±5%; ½ watt.	Osc grid meter shunt	JAN RC20AF680J
R-103	3350	165000-1861	RESISTOR, composition: fixed; 270 ohms ±5%; 2 watt.	Osc cathode bias	JAN RC42G271J
R-108	3350	103000-1476	RESISTOR, composition: same as R-102.	1st harmonic gen grid meter shunt	JAN RC20AF680J
R-113	3350	098000-1851	RESISTOR, composition: fixed; 47 ohms ±5%; ½ watt.	2nd harmonic gen grid meter shunt	JAN RC20GF470J
X-113	1600		PANEL, Crystal Mounting: Type MFE phenolic; $6\frac{9}{16}$″ lg x 3⅜″ wd x $\frac{21}{64}$″ thk overall; notch in side 1″ lg x $\frac{3}{64}$″ wd; 4 holes $\frac{5}{32}$″ dia on $1\frac{9}{16}$″ x 6⅛″ mtg/c; 96 phosphor bronze or beryllium copper contact pins, cad pl; with panel vertical notch to right; marked "A," "B," "C," "D," at top and bottom, terminals numbered "1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12" four places.	Mounts crystals	Sylvania 80773-1
Y-101* to Y-148*			CRYSTAL UNIT CR-18/U.	Channel crystals	

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

201-399 series	1600	215127921	RADIO RECEIVER R-77/ARC-3: AM; 100 to 156 mc; 28 v dc, 3.5 amp; mtd in metal cabinet; $14\frac{5}{16}$″ lg x 11″ wd x 6″ h: (17 tube superheterodyne circuit; 8 xtal controlled channels; includes tubes and mount MT-237/ARC-3).	VHF Radio Receiver	Sylvania 55000-1
201-399 series	1600	215127921	RADIO RECEIVER R-77A/ARC-3: AM; 100 to 156 mc; 28 v dc, 3.5 amp; mtd in metal cabinet; $14\frac{5}{16}$″ lg x 11″ wd x 6″ h; (17 tube superheterodyne circuit; 8 xtal controlled channels; includes tubes).	VHF Radio Receiver	Sylvania 55000-1
201-399 series	1600	013424030	RADIO RECEIVER R-77B/ARC-3: AM; 100 to 156 mc; 28 v dc, 3.5 amp; mtd in metal cabinet; $14\frac{5}{16}$″ lg x 11″ wd x 6″ h; (17 tube superheterodyne circuit; 8 xtal controlled channels; includes tubes).	VHF Radio Receiver	Sylvania 66402-1
201-399 series	1600	215127921	RADIO RECEIVER R-428/ARC-36: AM; 100 to 156 mc; 28 v dc, 3.5 amp; mtd in metal cabinet; 17¼″ lg x 11″ wd x 6½″ h; (17 tube superheterodyne circuit; 16 xtal controlled channels; includes tubes).	VHF Radio Receiver	Sylvania 55000-1

201-399 series	1600	215127921	RADIO RECEIVER R-428A/ARC-36: AM; 100 to 156 mc; 28 v dc, 3.5 amp; mtd in metal cabinet; 17¼″ lg x 11″ wd x 6½″ h; (17 tube superheterodyne circuit; 16 xtal controlled channels; includes tubes).	VHF Radio Receiver	Sylvania 55000-1
201-399 series	1600	013424030	RADIO RECEIVER R-428B/ARC-36: AM; 100 to 156 mc; 28 v dc, 3.5 amp; mtd in metal cabinet; 17¼″ lg x 11″ wd x 6½″ h; (17 tube superheterodyne circuit; 16 xtal controlled channels; includes tubes).	VHF Radio Receiver	Sylvania 66402-1
201-399 series	1600	013424200	RADIO RECEIVER R-608/ARC-49; AM; 100 to 156 mc; 28 v dc, 3.5 amp; mtd in metal cabinet $15\frac{9}{16}$″ lg x 11″ wd x 6″ h; (17 tube superheterodyne circuit; 48 xtal controlled channels; includes tubes).	VHF Radio Receiver	Sylvania 81149-1
			MOUNTING BASE, MT-237C/ARC-3: 11¼″ lg x 10½″ wd x $\frac{5}{16}$″ h overall; extruded center cut-out 5½″ sq; (c/o mtg plate w/4 snapslide fastener studs; 2 mtg base channels $10\frac{11}{16}$″ lg x 2½″ wd x $\frac{5}{16}$″ h; 2 ground straps; vibration mounts A-201, A-202, A-203, and A-204); marked "MT-237C/ARC-3." (AF Part No. 51D13674-2)	Mounts Radio Receiver	Sylvania 77819-1
A-201	6600	574869-34	MOUNT, Vibration: round; load range 3 to 6 lb; 1½″ h approx overall; rubber cushion; hex center post tapped No. 8-32 NC-2B thd, $\frac{9}{32}$″ deep; Al cupshaped holder; square base $1\frac{13}{16}$″ x $1\frac{13}{16}$″; base attached to holder by 4 Al grommets approx $\frac{3}{16}$″ ID x ⅛″ h mounted in corners on 1⅜″ centers; part of Mounting Base MT-237C/ARC-3.	Mounts MT-237C/ARC-3	Sylvania 77808-2 Barry 770-6G
A-202	6600	574869-4	MOUNT, Vibration: round; load range 5½″ to 9 lb; 1½″ h approx overall; rubber cushion; hex center post tapped No. 8-32 NC-2B thd, $\frac{9}{32}$″ deep; Al cupshaped holder; square base $1\frac{13}{16}$″ x $1\frac{13}{16}$″ base attached to holder by 4 A1 grommets approx $\frac{3}{16}$″ ID x ⅛″ h mounted in corners on 1⅜″ centers; part of Mounting Base MT-237C/ARC-3.	Mounts MT-237C/ARC-3	Sylvania 77808-3 Barry 770-9G
A-203	6600	574869-34	MOUNT, Vibration: same as A-201.	Mounts MT-237C/ARC-3	Sylvania 77808-2 Barry 770-6G
A-204	6600	574869-4	MOUNT, Vibration: same as A-202.	Mounts MT-237C/ARC-3	Sylvania 77808-3 Barry 770-9G
A-205 thru A-212	3370	740000-2135	BASE, Tube Shield: 0.015 CRS; base flange 0.915″ dia x 0.800″ OD above flange; w/slight outward curvature $\frac{11}{32}$″ above base to 0.905″ dia on ea side to lock shield w/irregular surface; two 0.120″ mtg holes in base; centers 0.875″. (AF Part No. 2ZK11102-5).	Tube shield	Sylvania 55113-1 Cinch 1022
A-213*			BRACKET, relay: "S" shape; CRS cad pl; $1\frac{5}{16}$″ lg x ⅜″ wd x 2⅜″ h; 1 mtg hole $\frac{11}{64}$″ dia.	Holds K-201 in place	Sylvania 56421-1
A-214			PANEL ASSEMBLY, FRONT: Al, caustic dipped; 11″ lg x 5⅞″ wd x $2\frac{5}{16}$″ h overall; (includes S-204 and H-203; marked "A, B, C, D, E, F, G, H," "SQUELCH," "PL-259," "PL-153A" and "PL-284"; four mounting slots $\frac{11}{64}$″ wd).	Supports switch S-204	Sylvania 56705-1

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
B-201	1600	375700820	MOTOR, DC: shunt field; closed frame; $2\frac{15}{16}$" h x $1\frac{33}{64}$" dia over-all; shaft $\frac{3}{16}$" dia x $1\frac{3}{32}$" lg at base; ⅜" lg at top; 28 v dc, ½ amp; 12,000 rpm; (fixed mtg base; mtd w/3 tapped No. 6-32 holes on ⅝" x $1\frac{3}{32}$" x 1¼" centers; 1 wire lead 3¾" lg). (AF Part No. 3H3100-49)	Tuning drive	Sylvania 56103-1
C-201	3330	314693355	CAPACITOR, fixed: mica; 500 mmf +15% −5%; 500 vdcw; $\frac{11}{32}$" lg x $\frac{29}{64}$" dia; (metal button type case; wax impregnation; 1 term ½" lg; 1 mtg hole tapped No. 3-48). (AF Part No. 3D500-163)	Harm gen bypass	Sylvania 55651-1 Erie Type 370B-500
C-202	3330	314693345	CAPACITOR, fixed: mica; 500 mmf +15% −5%; 500 vdcw; $\frac{29}{64}$" dia x $\frac{1}{16}$" thk; (metal button type case; wax impregnation; 2 axial term. $\frac{9}{32}$" lg, one on each side of case; mts by soldering to chassis). (AF Part No. 3D9500-161)	RF amplr heater bypass	Sylvania 55331-1 Erie Type 370AB
C-203	3330	314933030	CAPACITOR, fixed: mica; 1000 mmf ±10%; 300 vdcw; $\frac{11}{16}$" max lg x $\frac{7}{16}$" max wd x $\frac{3}{16}$" max thk; (molded bakelite case; wax impregnation; 2 wire leads; 1¼" min lg.) (AF Part No. 3DKA1-91.1)	1st detector heater bypass	Sylvania 56061-1 Aerovox Type 1468S
C-204	3330	314693345	CAPACITOR, fixed: same as C-202.	2nd harmonic amplr heater bypass	Sylvania 55331-1 Erie Type 370AB
C-205	3330	314693345	CAPACITOR, fixed: same as C-202.	2nd harmonic amplr heater bypass	Sylvania 55331-1 Erie Type 370AB
C-206	3330	314693345	CAPACITOR, fixed: same as C-202.	1st harmonic amplr heater bypass	Sylvania 55331-1 Erie Type 370AB
C-207	3330	376143900	CAPACITOR, fixed: mica; 10,000 mmf ±10%; 300 vdcw; $\frac{53}{64}$" sq max x $\frac{11}{32}$" max thk; (molded bakelite case; wax impregnation; 2 No. 18 axial wire leads, 1⅛" min lg). (AF Part No. 3K3510311)	3rd IF amplr heater bypass	JAN CM35A103K
C-208 (Used on ARC-3 & ARC-36 only)	3330	312860270	CAPACITOR, fixed: ceramic; 5 mmf ±.5 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562" max lg x 0.250" max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼" min lg). (AF Part No. 3D9005-42)	Osc feed back	JAN CC21CH050D

C-209	3330	312974000	CAPACITOR, fixed: ceramic; 10 mmf ±0.5 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg); part of Z-201. (AF Part No. 3D9010-15)	Osc plate tuning	JAN CC21CH100D
C-210	3330	314933030	CAPACITOR, fixed: same as C-203; part of Z-201.	Osc plate bypass	Sylvania 56061-1 Aerovox Type 1468S
C-211	3330	312974000	CAPACITOR, fixed: same as C-209.	Osc plate coupling	JAN CC21CH100D
C-212	3330	314933030	CAPACITOR, fixed: same as C-203.	Fundamental amplr cathode bypass	Sylvania 56061-1 Aerovox Type 1468S
C-213	3330	314933030	CAPACITOR, fixed: same as C-203.	Fundamental amplr cathode bypass	Sylvania 56061-1 Aerovox Type 1468S
C-214	3330	314933030	CAPACITOR, fixed: same as C-203.	Fundamental amplr screen bypass	Sylvania 56061-1 Aerovox Type 1468S
C-215	3330	314933030	CAPACITOR, fixed: same as C-203.	Fundamental amplr screen bypass	Sylvania 56061-1 Aerovox Type 1468S
C-216	3330	314933030	CAPACITOR, fixed: same as C-203; part of T-201.	Fundamental amplr plate bypass	Sylvania 56061-1 Aerovox Type 1468S
C-217	3330	314933030	CAPACITOR, fixed: same as C-203; part of T-201.	Harmonic gen grid bypass	Sylvania 56061-1 Aerovox Type 1468S
C-218	3330	314693340	CAPACITOR, fixed: mica; 500 mmf +15% −5%; 500 vdcw; 29/64″ max dia x 5/32″ max wd; metal button type case; 1 solder lug term. ⅜″ lg. (AF Part No. 3D9500-160)	Harmonic gen screen bypass	Sylvania 55330-1 Erie Type 370F
C-219*			CAPACITOR, variable: air; 3-section; 8 to 48 mmf; 2,500 v rms test; 0.010 air gap; 3.678 lg x 2″ wd x 3⅜″ h; shaft 1″ lg x .375″ dia; (17 plates per section; steatite insulation; 1 mtg foot tapped No. 8-32; 2 mtg studs No. 8-32 thd, ⅝″ lg; 3¼″ x 1 15/32″ mtg/c); 3 trimmers; 1 to 8 mmf; 5 plates.		Sylvania 55026-1
C-219A*			CAPACITOR, variable: part of C-219.	Harmonic gen plate tuning	Sylvania 55026-1
C-219B*			CAPACITOR, variable: part of C-219.	1st harmonic amplr plate tuning	Sylvania 55026-1
C-219C*			CAPACITOR, variable: part of C-219.	2nd harmonic amplr plate tuning	Sylvania 55026-1
C-219D*			CAPACITOR, variable: part of C-219.	Trimmer for C-219A	Sylvania 55026-1
C-219E*			CAPACITOR, variable: part of C-219.	Trimmer for C-219B	Sylvania 55026-1
C-219F*			CAPACITOR, variable: part of C-219.	Trimmer for C-219C	Sylvania 55026-1
C-220	3330	314693340	CAPACITOR, fixed: same as C-218.	Harmonic gen plate bypass	Sylvania 55330-1 Erie Type 370F

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
C-221	3330	313090390	CAPACITOR, fixed: ceramic; 15 mmf ±5%; −750 mmf/mf/deg C temp coef; 500 vdcw; 0.390″ max lg; x 0.190″ max dia; (not insulated; wax impregnation; 2 radial wire leads; 1¼″ min lg). (AF Part No. 3D9015-40)	Harmonic gen plate coupling	JAN CC20UJ150J
C-222	3330	314693345	CAPACITOR, fixed: same as C-202.	1st harmonic amplr grid meter bypass	Sylvania 55331-1 Erie Type 370AB
C-223	3330	314693340	CAPACITOR, fixed: same as C-218.	1st harmonic amplr screen bypass	Sylvania 55330-1 Erie Type 370F
C-224	3330	314693340	CAPACITOR, fixed: same as C-218.	1st harmonic amplr plate bypass	Sylvania 55330-1 Erie Type 370F
C-225	3330	313584165	CAPACITOR, fixed: ceramic; 51 mmf ±5%; −750 mmf/mf/deg C temp coef; 500 vdcw; 0.390″ max lg x 0.190″ max dia; (not insulated; wax impregnation; 2 radial wire leads; 1¼″ min lg). (AF Part No. 3D9051-12)	1st harmonic amplr plate coupling	JAN CC20UJ510J
C-226	3330	314693345	CAPACITOR, fixed: same as C-202.	2nd harmonic amplr grid meter bypass	Sylvania 55331-1 Erie Type 370AB
C-227	3330	314693340	CAPACITOR, fixed: same as C-218.	2nd harmonic amplr screen bypass	Sylvania 55330-1 Erie Type 370F
C-228	3330	314693340	CAPACITOR, fixed: same as C-218.	2nd harmonic amplr plate bypass	Sylvania 55330-1 Erie Type 370F
C-229†	3330	312812090	CAPACITOR, fixed: ceramic; 4 mmf ±.25 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9004-8)	2nd harmonic amplr plate trimmer shunt	JAN CC21CH040C
C-230	3330	376143900	CAPACITOR, fixed: same as C-207.	Motor hash filter	JAN CM35A103K
C-231	3330	316776232	CAPACITOR, fixed: paper; 250,000 mmf +20% −10%; 400 vdcw; 2½″ max lg x $\frac{11}{16}$″ max dia; (metal case; hermetically sealed; mineral oil impregnation; 1 solder lug on bottom; case grounded; radial mtg foot ½″ from bottom of capacitor w/1 hole $\frac{3}{16}$″ dia). (AF Part No. 3DA250-206)	Clutch-brake solenoid arc suppressor	Sylvania 55316-1 Aerovox Type 489 MGY −.25

C-232	3330	314693350	CAPACITOR, fixed: ceramic; 500 mmf ±20%, 250 vdcw; 0.562" max lg x 0.250" max dia; (ceramic case; wax impregnated; 2 axial wire leads; 1¼" min lg). (AF Part No. 3D9500-162)	RF bypass, power receptacle, pin No. 12	Sylvania 55366-1 Erie Type Hi K, style K
C-233	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 2	Sylvania 55366-1 Erie Type Hi K, style K
C-234	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 1	Sylvania 55366-1 Erie Type Hi K, style K
C-235	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 4	Sylvania 55366-1 Erie Type Hi K, style K
C-236	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 3	Sylvania 55366-1 Erie Type Hi K, style K
C-237	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 6	Sylvania 55366-1 Erie Type Hi K, style K
C-238	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle pin No. 5	Sylvania 55366-1 Erie Type Hi K, style K
C-239	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle pin No. 9	Sylvania 55366-1 Erie Type Hi K, style K
C-240	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 8	Sylvania 55366-1 Erie Type Hi K, style K
C-241	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 18	Sylvania 55366-1 Erie Type Hi K, style K
C-242	3330	314933030	CAPACITOR, fixed: same as C-203.	RF bypass, power receptacle, pin No. 11	Sylvania 56061-1 Aerovox Type 1468S
C-243	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 14	Sylvania 55366-1 Erie Type Hi K, style K
C-244	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 15	Sylvania 55366-1 Erie Type Hi K, style K
C-245	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 13	Sylvania 55366-1 Erie Type Hi K, style K
C-246	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 16	Sylvania 55366-1 Erie Type Hi K, style K
C-247*			CAPACITOR, variable: air; 4-section; 8 to 35 mmf; 2,500 v rms test; 0.010 air gap; 4.781" lg x 2" wd x 3⅜" h; shaft 1" lg x 0.375" diam; 13 plates per section; steatite insulation; 1 mtg foot tapped No. 8-32; 2 mtg studs ⅝" lg threaded No. 8-32; 4 7/16" x 1 15/32" mtg/c; 4 trimmers; 1 to 8 mmf; 5 plates.		Sylvania 55027-1

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* Not available as a spare part, listed for reference only.

† Used in Radio Receiver R-77/ARC-3 or R-428/ARC-36 and in R-77A/ARC-3 or R-428A/ARC-36 prior to "M-1" modification.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
C-247A*			CAPACITOR, variable: part of C-247.	Ant tuning	Sylvania 55027-1
C-247B*			CAPACITOR, variable: part of C-247.	RF amplr grid tuning	Sylvania 55027-1
C-247C*			CAPACITOR, variable: part of C-247.	RF amplr plate tuning	Sylvania 55027-1
C-247D*			CAPACITOR, variable: part of C-247.	1st detector grid tuning	Sylvania 55027-1
C-247E*			CAPACITOR, variable: part of C-247.	Trimmer for C-247A	Sylvania 55027-1
C-247F*			CAPACITOR, variable: part of C-247.	Trimmer for C-247B	Sylvania 55027-1
C-247G*			CAPACITOR, variable: part of C-247.	Trimmer for C-247C	Sylvania 55027-1
C-247H*			CAPACITOR, variable: part of C-247.	Trimmer for C-247D	Sylvania 55027-1
C-248	3330	312774135	CAPACITOR, fixed: ceramic; 3 mmf ±0.25 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9003-21)	Ant trimmer shunt	JAN CC21CH030C
C-248†	3330	312886150	CAPACITOR, fixed: ceramic; 6 mmf ±0.25 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9006-14)	Ant trimmer shunt	JAN CC21CH060C
C-249	3330	314693340	CAPACITOR, fixed: same as C-218.	RF amplr grid bypass	Sylvania 55330-1 Erie Type 370F
C-250	3330	314693340	CAPACITOR, fixed: same as C-218.	RF amplr cathode bypass	Sylvania 55330-1 Erie Type 370F
C-251	3330	314693340	CAPACITOR, fixed: same as C-218.	RF amplr cathode bypass	Sylvania 55330-1 Erie Type 370F
C-253	3330	314693340	CAPACITOR, fixed: same as C-218.	RF amplr screen bypass	Sylvania 55330-1 Erie Type 370F
C-254	3330	314693340	CAPACITOR, fixed: same as C-218.	RF amplr plate bypass	Sylvania 55330-1 Erie Type 370F

C-255†	3330	312774135	CAPACITOR, fixed: ceramic; 3 mmf ±.25 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; 1¼″ lg). (AF Part No. 3D9003-21)	RF amplr plate trimmer shunt	JAN CC21CH030C
C-256	3330	376143900	CAPACITOR, fixed: same as C-207.	B+ bypass	JAN CM35A103K
C-257	3330	313584165	CAPACITOR, fixed: same as C-225.	1st detector grid coupling	JAN CC20UJ510J
C-258	3330	314693345	CAPACITOR, fixed: same as C-202.	1st detector grid meter bypass	Sylvania 55331-1 Erie Type 370AB
C-259	3330	314693340	CAPACITOR, fixed: same as C-218.	1st detector cathode bypass	Sylvania 55330-1 Erie Type 370F
C-260	3330	314933030	CAPACITOR, fixed: same as C-203.	1st detector cathode bypass	Sylvania 56061 Aerovox Type 1468S
C-261	3330	314933030	CAPACITOR, fixed: same as C-203.	1st detector screen bypass	Sylvania 56061-1 Aerovox Type 1468S
C-262*			CAPACITOR, fixed: ceramic; 90mmf ±3%; −30 mmf/mf/deg C temp coef; 500 vdcw; 1⅛″ max lg x $\frac{3}{16}$″ max dia; (not insulated; wax impregnation; 2 radial wire leads; 1¼″ min lg); part of T-202.	1st detector plate tuning	Sylvania 55306-1
C-263*			CAPACITOR, fixed: mica; 4,700 mmf ±10%; 300 vdcw; 1″ max lg x ⅝″ max wd x $\frac{3}{16}$″ max thk; (molded bakelite case; wax impregnation; 2 wire leads; 1½″ min lg); part of T-202.	1st detector plate bypass	Sylvania 56060-1
C-264*			CAPACITOR, fixed: same as C-263; part of T-202.	1st IF amplr grid bypass	Sylvania 56060-1
C-265*			CAPACITOR, fixed: same as C-262; part of T-202.	1st IF amplr grid tuning	Sylvania 55306-1
C-266	3330	376143900	CAPACITOR, fixed: same as C-207.	1st IF amplr cathode bypass	JAN CM35A103K
C-267	3330	314933030	CAPACITOR, fixed: same as C-203.	1st IF amplr screen bypass	Sylvania 56061-1 Aerovox Type 1468S
C-268*			CAPACITOR, fixed: same as C-262; part of T-203.	1st IF amplr plate tuning	Sylvania 55306-1
C-269*			CAPACITOR, fixed: same as C-263; part of T-203.	1st IF amplr plate bypass	Sylvania 56060-1
C-270*			CAPACITOR, fixed: same as C-263; part of T-203.	2nd IF amplr grid bypass	Sylvania 56060-1
C-271*			CAPACITOR, fixed: same as C-262; part of T-203.	2nd IF amplr grid tuning	Sylvania 55306-1
C-272	3330	376143900	CAPACITOR, fixed: same as C-207.	2nd IF amplr cathode bypass	JAN CM35A103K
C-273	3330	314933030	CAPACITOR, fixed: same as C-203.	2nd IF amplr screen bypass	Sylvania 56061-1 Aerovox Type 1468S

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* Not available as a spare part, listed for reference only.

†Used in Radio Receiver R-77/ARC-3 or R-428/ARC-36 and in R-77A/ARC-3 or R-428A/ARC-36 prior to "M-1" modification.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
C-274*			CAPACITOR, fixed: same as C-262; part of T-204.	2nd IF amplr plate tuning	Sylvania 55306-1
C-275*			CAPACITOR, fixed: same as C-263; part of T-204.	2nd IF amplr plate bypass	Sylvania 56060-1
C-276*			CAPACITOR, fixed: same as C-262; part of T-204.	3rd IF amplr grid tuning	Sylvania 55306-1
C-277	3330	376150200	CAPACITOR, fixed: mica; 4,700 mmf ±10%; 500 vdcw; $\frac{53}{64}$″ sq max x $\frac{11}{32}$″ max thk; (molded bakelite case; wax impregnation; 2 No. 18 AWG leads, 1⅛″ min lg). (AF Part No. 3K3547211)	B+ bypass	JAN CM35A472K
C-278	3330	376143900	CAPACITOR, fixed: same as C-207.	3rd IF amplr cathode bypass	JAN CM35A103K
C-279	3330	314933030	CAPACITOR, fixed: same as C-203.	3rd IF amplr screen bypass	Sylvania 56061-1
C-280*			CAPACITOR, fixed: ceramic; 50 mmf ±3%; −30 mmf/mf/deg C temp coef; 500 vdcw; 1⅛″ max lg x $\frac{3}{16}$″ max dia; (not insulated; wax impregnation; 2 radial wire leads; 1¼″ min lg); part of T-205.	3rd IF amplr plate tuning	Sylvania 55306-3
C-281*			CAPACITOR, fixed: same as C-263; part of T-205.	3rd IF amplr plate bypass	Sylvania 56060-1
C-282*			CAPACITOR, fixed: mica; 56 mmf ±10%; 500 vdcw; $\frac{51}{64}$″ max lg x $\frac{15}{32}$″ max wd x $\frac{7}{32}$″ max thk; (molded bakelite case; wax impregnation; 2 wire leads; 1⅛″ min lg): part of T-205.	Diode filter	Sylvania 56581-1
C-283*			CAPACITOR, fixed: ceramic; 100 mmf ±3%; −30 mmf/mf/deg C temp coef; 500 vdcw; 1⅛″ max lg x $\frac{3}{16}$″ max dia; (not insulated; wax impregnation; 2 radial wire leads; 1¼″ min lg); part of T-205.	Diode tuning	Sylvania 55306-2
C-284	3330	313300685	CAPACITOR, fixed: ceramic; 27 mmf ±10%; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.812″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation, 2 axial wire leads; 1¼″ min lg). (AF Part No. 3D9027-11)	AVC diode coupling	JAN CC26CH270K
C-285	3330	31677632	CAPACITOR, fixed: same as C-231.	Noise limiter pulse filter	Sylvania 55316-1 Aerovox Type 489 MGY −.25

C-286	3330	376037200	CAPACITOR, fixed: mica; 510 mmf ±5%; 500 vdcw; $\frac{51}{64}$" max lg x $\frac{15}{32}$" max wd x $\frac{7}{32}$" max thk; (molded bakelite case; wax treated; mineral oil impregnation; 2 axial wire leads; 1⅛" min lg). (AF Part No. 3K2051122)	Noise limiter cathode bypass	JAN CM20B511J
C-287	3330	376143900	CAPACITOR, fixed: same as C-207.	Cathode follower grid coupling	JAN CM35A103K
C-288	3330	316163255	CAPACITOR, fixed: paper; 50,000 mmf +60% −10% 120 vdcw; $\frac{53}{64}$" sq max x $\frac{11}{32}$" max thk; (molded bakelite case; wax treated; mineral oil impregnation; 2 axial wire leads, 1¼" min lg). (AF Part No. 3DA50-172)	Runway localizer coupling	Sylvania 55367-1 Micamold Type 337-13
C-289	3330	376143900	CAPACITOR, fixed: same as C-207.	Squelch tube grid bypass	JAN CM35A103K
C-290	3330	376150200	CAPACITOR, fixed: same as C-277.	1st AF amplr grid coupling	JAN CM35A472K
C-291	3330	317511300	CAPACITOR, fixed: electrolytic; 2-section; 22.5-22.5 min mf; 50 vdcw; 3¼" max h x 1⅜" max dia; (metal case; hermetically sealed; filled with potting compound; 3 terminals below mtg surface). (AF Part No. 3DB22E5)		Sylvania 55318-1 Aerovox LE-EP-50 V
C-291A			CAPACITOR, fixed: part of C-291; red.	1st AF amplr cathode bypass	Sylvania 55318-1
C-291B			CAPACITOR, fixed: part of C-291; blue.	AF output cathode bypass	Sylvania 55318-1
C-292	3330	316162770	CAPACITOR, fixed: paper; 50,000 mmf +20% −10%; 200 vdcw; 1$\frac{7}{16}$" max lg x $\frac{53}{64}$" max wd x $\frac{11}{32}$" max thk; (molded bakelite case; wax treated; mineral oil impregnation; two wire leads 1¼" min lg). (AF Part No. 3DA50-90)	Squelch tube plate bypass	JAN CN42A503K
C-293	3330	316776232	CAPACITOR, fixed: same as C-231.	1st AF amplr plate bypass	Sylvania 55316-1 Aerovox Type 489 MGY −.25
C-294	3330	376798000	CAPACITOR, fixed: mica; 1,800 mmf ±10%; 500 vdcw; $\frac{53}{64}$" sq max x $\frac{11}{32}$" max thk; (molded bakelite case; wax impregnation; 2 No. 18 AWG axial wire leads, 1⅛" min lg). (AF Part No. 3K3518211)	2nd audio amplr grid coupling	JAN CM35A182K
C-295	3330	376150200	CAPACITOR, fixed: same as C-277.	AVC delay cathode bypass	JAN CM35A472K
C-296	3330	376150200	CAPACITOR, fixed: same as C-277.	MF receiver input coupling	JAN CM35A472K
C-297	3330	376143900	CAPACITOR, fixed: same as C-207.	AF output grid coupling	JAN CM35A103K

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
C-298	3330	317680810	CAPACITOR, fixed: paper; 10,000 mmf ±10%; 600 vdcw; $1\frac{7}{16}$" max lg x $\frac{53}{64}$" max wd x $\frac{11}{32}$" max thk; (molded bakelite case; wax treated; mineral oil impregnation; 2 No. 20 pigtail wire leads, $1\frac{1}{4}$" min lg). (AF Part No. 3DA10-381)	Output pad	JAN CN42A103M
C-299	3330	314693350	CAPACITOR, fixed: same as C-232.	RF bypass, power receptacle, pin No. 17	Sylvania 55366-1 Erie Type Hi K, style K
C-300	3330	316163255	CAPACITOR, fixed: same as C-288.	1st IF amplr AVC filter	Sylvania 55367-1 Micamold Type 337-13
C-301	3330	316163255	CAPACITOR, fixed: same as C-288.	AVC filter	Sylvania 55367-1 Micamold Type 337-13
C-302†	3330	314933030	CAPACITOR, fixed: same as C-203.	2nd AF amplifier plate bypass	Sylvania 56061-1
E-201	8880	500577-7855	BOARD, terminal: 5 brass cad pl post type terminals; molded bakelite; $4\frac{1}{8}$" lg x 1" wd x $\frac{3}{32}$" thk; (2 mtg holes $\frac{1}{8}$" dia on $3\frac{7}{32}$" mtg/c). (AF Part No. 2Z9405.100)	RF tuning assembly connections	Sylvania 55041-1
E-202	8880	500477-8825	BOARD, terminal: 4 brass cad pl post type terminals; molded bakelite; $3\frac{25}{32}$" lg x $\frac{3}{8}$" wd x $\frac{3}{32}$" thk; (2 mtg holes $\frac{1}{8}$" dia on $2\frac{13}{32}$" mtg/c; marked "R-239"). (AF Part No. 2Z9404.184)	RF tuning assembly connection	Sylvania 55042-1
E-203	8880	500177-3355	BOARD, terminal: 1 brass cad pl post type terminal; molded bakelite; $\frac{3}{4}$" lg x $\frac{3}{8}$" wd x $\frac{3}{32}$" thk; (1 mounting hole $\frac{1}{8}$" dia). (AF Part No. 2Z9401.87)	RF tuning assembly connections	Sylvania 55043-1
E-204	8880	500977-7555	BOARD, terminal: 9 brass cad pl post type terminals; molded bakelite; $4\frac{1}{4}$" lg x $1\frac{1}{16}$" wd x $\frac{3}{32}$" thk; (2 cad pl CRS brackets w/2 No. 6-32 tapped holes on $2\frac{1}{8}$" mtg/c; marked "R-201," "R-205," "R-223," and "R-233"). (AF Part No. 2Z9409.40)	Cable connection	Sylvania 55388-1
E-205	8880	500477-5375	BOARD, terminal: 4 brass cad pl post type terminals; molded bakelite; $2\frac{3}{8}$" lg x $\frac{3}{8}$" wd x $\frac{3}{32}$" thk; (2 metal inserts with No. 4-40 tapped holes on $1\frac{1}{8}$" mtg/c). (AF Part No. 2Z9404.183)	Cable connection	Sylvania 55294-1

E-206	8880	500577-3255	BOARD, terminal: 5 brass cad pl post type terminals; molded bakelite; $1\frac{3}{8}$″ lg x $1\frac{3}{16}$″ wd x $\frac{3}{32}$″ thk; (cad pl CRS mtg bracket w/1 No. 6-32 tapped hole and $\frac{1}{8}$″ mtg ear on $\frac{1}{4}$″ mtg/c; marked "R-278" and "R-280"). (AF Part No. 2Z9405.101)	Mounts R-278 and R-280	Sylvania 55325-1
E-207	8880	500377-2255	BOARD, terminal: 3 brass cad pl post type terminals; molded bakelite; $1\frac{1}{4}$″ lg x $\frac{23}{32}$″ wd x $\frac{3}{32}$″ thk; (2 mtg holes $\frac{1}{8}$″ dia on $\frac{3}{4}$″ mtg/c). (AF Part No. 2Z9403.161)	Motor wire junction	Sylvania 56122-1
E-208	8880	501377-8755	BOARD, terminal: 13 brass cad pl post type terminals; molded bakelite; $6\frac{1}{16}$″ lg x $1\frac{1}{8}$″ wd x $\frac{3}{32}$″ thk; (2 cad pl mtg brackets w/2 No. 6-32 tapped holes on 4″ mtg/c; marked "C-296," "R-203," "R-271," "R-274," "R-275," "R-276," "R-289," and "R-290"). (AF Part No. 2Z9413.21)	Mounts C-296, R-203, R-271, R-274, R-275, R-276, R-289, and R-290	Sylvania 55285-1
E-209	8880	500277-3765	BOARD, terminal: 2 brass cad pl post type terminals; molded bakelite; $1\frac{1}{2}$″ lg x $1\frac{1}{8}$″ wd x $\frac{3}{32}$″ thk; (2 metal inserts with No. 6-32 tapped holes on $\frac{9}{16}$″ mtg/c; marked "C-288"). (AF Part No. 2Z9402.259)	Mounts C-288	Sylvania 55398-1
E-210	3370	790000-1815	SHIELD, Tube: steel, cad pl; cylindrical open top for miniature tubes; bayonet type mtg; $\frac{13}{16}$″ ID x $1\frac{3}{8}$″ lg; $\frac{7}{16}$″ OD x $1\frac{3}{8}$″ lg; (w/inside coil spring to keep miniature tubes in place). (AF Part No. 2Z8304.54)	Shields V-201	Sylvania 55114-1 Cinch 8660 P24-5
E-211	3370	790000-1815	SHIELD, Tube: same as E-210.	Shields V-202	Sylvania 55114-1 Cinch 8660 P24-5
E-212	3370	790000-1815	SHIELD, Tube: same as E-210.	Shields V-203	Sylvania 55114-1 Cinch 8660 P24-5
E-213	3370	790000-1815	SHIELD, Tube: same as E-210.	Shields V-204	Sylvania 55114-1 Cinch 8660 P24-5
E-214	3370	790000-1815	SHIELD, Tube: same as E-210.	Shields V-205	Sylvania 55114-1 Cinch 8660 P24-5
E-215	3370	790000-1815	SHIELD, Tube: same as E-210.	Shields V-206	Sylvania 55114-1 Cinch 8660 P24-5
E-216	3370	790000-1815	SHIELD, Tube: same as E-210.	Shields V-208	Sylvania 55114-1 Cinch 8660 P24-5
E-217	3370	780000-1815	SHIELD, Tube: same as E-210.	Shields V-209	Sylvania 55114-1 Cinch 8660 P24-5
E-218 to E-221	3320	332020297	INSULATOR, bushing: round post; steatite, silicone coated; $\frac{3}{4}$″ lg x $\frac{5}{16}$″ dia; (No. 6-32 tapped hole in each end, $\frac{1}{4}$″ deep). (AF Part No. 3G1250-12.20)	Insulation	Sylvania 55358 Generaco D-714

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† Used only in later models of Radio Receivers R-77A/ARC-3 or R-428A/ARC-36 (stencilled "M-1" adjacent to nameplate), R-77B/ARC-3, R-428B/ARC-36, and R-608/ARC-49.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
E-222	3320	292112102	KNOB: round; Al; for $\frac{3}{16}$" dia shaft; single No. 6-32 set screw; $\frac{7}{16}$" dia x $\frac{3}{4}$" h overall; shaft hole $\frac{7}{16}$" d; (medium diamond knurl). (AF Part No. 2Z5753.35)	Motor manual tuning	Sylvania 55654-1
E-223	1600	374439620	BRUSH, electrical contact: carbon; 28 vdc, 1 amp; 0.154" sq x $\frac{7}{32}$" lg; (terminal connected to brush by flexible copper wire and spring $\frac{1}{2}$" lg). (AF Part No. 3H525-73)	Tuning motor brush	Sylvania 56170-1 F. A. Smith Co. 11-120
E-224	1600	374439620	BRUSH, electrical contact: same as E-223.	Tuning motor brush	Sylvania 56170-1 F. A. Smith Co. 11-120
H-201 (Used on ARC-3 & ARC-36 only)	1600	287725997	COVER, relay contacts: Al, caustic-dipped; $6\frac{29}{32}$" lg x $1\frac{5}{8}$" thk; (marked "A-B-C-D-E-F-G-H" and "DO NOT BURNISH RELAY CONTACTS WHEN POWER IS ON"; has neoprene gasket; 3 mtg holes $\frac{5}{32}$" dia on $\frac{11}{64}$" x 6" mtg/c). (AF Part No. 2Z3352.84)	Covers crystal relay contacts	Sylvania 55315-1
H-202 (Used on ARC-3 only)	1600	287725995	COVER, crystal: Al, caustic-dipped; covers crystal compartment; $7\frac{3}{8}$" lg x $6\frac{1}{8}$" wd x $1\frac{1}{2}$" thk overall; mts w/hinge containing 2 captive fasteners on $5\frac{31}{32}$" mtg/c; has snap-lock fastener; 8 retaining springs). (AF Part No. 2Z3352.82)	Covers crystal compartment	Sylvania 55263-1
H-203	1600	299554547	WINDOW: dial, molded clear plastic; $2\frac{1}{16}$" lg x $\frac{7}{16}$" wd x $\frac{1}{32}$" thk, $\frac{7}{32}$" d overall; (2 mtg holes $\frac{5}{32}$" dia on $1\frac{5}{8}$" spacing). (AF Part No. 2ZA1352-58)	Covers freq dial	Sylvania 55208-1
H-204 to H-205	6500	916588	FASTENER: Dzus; steel, heat treated, cad pl; $\frac{3}{8}$" lg; $\frac{5}{16}$" dia slotted head; $\frac{3}{16}$" dia body; 0.200" from head to cam. (AF Part No. 6Z3809-20)	Secures crystal cover	Sylvania 55628-1 Dzus Type A3-20
H-206 to H-211	6500	916589	FASTENER: Dzus; steel, heat treated, cad pl; $\frac{3}{8}$" lg; $\frac{5}{16}$" dia slotted head; $\frac{3}{16}$" dia body; 0.250" from head to cam. (AF Part No. 6Z3809-7)	Secures cover	Sylvania 55628-2 Dzus Type A3-25
H-212	6500	916602	FASTENER: Dzus; steel, heat treated, cad pl; $\frac{7}{16}$" lg; $\frac{5}{16}$" dia slotted head; $\frac{3}{16}$" dia body; 0.300" from head to cam. (AF Part No. 6Z3809-19)	Secures cover	Sylvania 55628-3 Dzus Type A3-30
H-213 to H-220	6500	914700-4	SPRING, Dzus: 0.045" dia music wire; $\frac{15}{16}$" lg x $\frac{1}{4}$" wd x 0.150" h; $\frac{5}{8}$" mtg/c. (AF Part No. 6Z3809-12)	Locks fastener	Sylvania 55650-1 Dzus Type S3-150

H-221	6500	914701	SPRING, Dzus: 0.045″ dia music wire; $\frac{15}{16}$″ lg x ¼″ wd x 0.175″ h; ⅝″ mtg/c. (AF Part No. 6Z3809-15)	Locks fastener	Sylvania 55650-2 Dzus S3-175
H-222 to H-227	1600	291492877	FASTENER ASSEMBLY: c/o Dzus fastener and phosphor bronze spring; 2″ lg x $\frac{5}{16}$″ wd x $\frac{1}{64}$″ thk; 2 mtg holes, 0.098″ dia on $\frac{5}{16}$″ mtg/c. (AF Part No. 2Z4308-10)	Secures top cover	Sylvania 55627-1
H-228††	*		COVER, connector: brass, silver pl; $\frac{7}{16}$″ thk overall; ¾″ dia; ⅝″-24 inside thd; has provision for attaching retaining chain.	Covers guard channel connector	Sylvania 56735-1
H-235	1600	697268486	LATCH, fastener: stainless steel; flat "J" shaped; ¾″ lg x $\frac{19}{32}$″ wd x $\frac{5}{32}$″ thk; mts by 2 holes No. 4-40 tapped. (AF Part No. 6Z6918-22)	Secures front cover	Sylvania 55258-1
H-236	1600	291641857	GUIDE, screwdriver: brass, cad pl; 1$\frac{9}{16}$″ lg x $\frac{23}{64}$″ dia at one end, other end hex shaped and ⅜″-32 tapped; screws on to front of squelch control. (AF Part No. 2Z4884A-7)	Screwdriver guide for squelch control	Sylvania 55250-1
H-237	1600'	291696608	HINGE: piano; Al, caustic dip; 6$\frac{19}{32}$″ lg x ½″ wd; removable pin; 2 mtg holes extruded upward $\frac{3}{16}$″ dia on 5$\frac{31}{32}$″ mtg/c; mtd with 2 Dzus fasteners. (AF Part No. 2Z5038-8)	Mounts front cover	Sylvania 55270-1
J-201	8850	167675	CONNECTOR, female contact: Sig C socket SO-239; 1 round female contact; 1″ lg x 1″ wd x 1⅜″ h including hood; (1 amp rf; cylindrical zinc body; molded bakelite insert; cable opening $\frac{5}{32}$″ dia; ⅝″-24 thd for mtg). (AF Part No. 2Z8799-239)	Ant connector (PL-259)	SO-239
J-202††	8850	111900	CONNECTOR ASSEMBLY, female contact: RF Receptacle UG-103/U (Socket SO-264); 2 round female contacts; 1″ lg x 1″ wd x 1½″ h, including hood; 1 amp rf; cylindrical zinc body; molded bakelite insert; cable opening $\frac{5}{32}$″ dia; ⅝″-24 thd for mtg; assembled with r-f cable RG-58/U, W-201, 19⅛″ max lg.	Guard channel converter connector	Sylvania 56737-1
K-201	3380	512380-1725	RELAY, Sensitive: solenoid; SPST, normally open; Al can, 1⅞″ dia x 2$\frac{1}{32}$″ h overall; (16 ga palladium contacts; rated 28 v dc, 0.85 amp; single wound coil, 10 v dc 4 ma, 2,500 ohms; fast action; hermetically sealed; 5 pin plug-in mtg). (AF Part No. 2Z7585-114)	Tuning control	Sylvania 55585-1 Cookeco 485
K-202*			COIL, solenoid: relay; single winding; 14 v dc, 275 ma, 55 ohms; 1⅜″ lg x ½″ ID x 1.073″ OD; (500 v dc insulation test); part of O-203.	Clutch-brake solenoid	Sylvania 56139-1

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* Not available as a spare part, listed for reference only.

†† Used in Radio Receivers R-77A/ARC-3, R-77B/ARC-3, R-428A/ARC-36, R-428B/ARC-36, and R-608/ARC-49.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
K-203	3380	701480-5315	RELAY, solenoid: SPST, normally open; $1\frac{7}{16}''$ lg x $\frac{57}{64}''$ wd x $1\frac{15}{32}''$ h overall; (16 ga palladium contacts, rated 200 v dc, 2 amp; single wound coil, 14 v dc, 50 ma, 280 ohms; coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on $\frac{3}{4}''$ mtg/c). (AF Part No. 2Z7585-116)	Motor switching	Sylvania 55340-1 Cookeco 440
K-204†	3380	555120-9645	RELAY, solenoid: general purpose; 2 contact piles, both 3A; $1\frac{7}{16}''$ lg x $1\frac{15}{32}''$ h x $\frac{15}{16}''$ max thk overall; (16 ga palladium contacts; 28 v dc, 2 amp; single wound coil, 14 v dc, 93 ma, 150 ohms; coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on $\frac{3}{4}''$ mtg/c). (AF Part No. 2Z7594-3)	Tuning system starting	Sylvania 55528-1 Cookeco 428
K-205†	3380	555120-9645	RELAY, solenoid: same as K-204.	Tuning system starting	Sylvania 55528-1 Cookeco 428
K-206†	3380	701765-2415	RELAY, Crystal: solenoid; 1C2A; 1 low capacity section; $1\frac{7}{16}''$ lg x $1\frac{15}{32}''$ h x $\frac{57}{64}''$ thk overall; (16 ga palladium contacts; rated 200 v dc, 2 amp; single wound coil, 14 v dc, 50 ma, 280 ohms; fast action; coil impregnated for tropical use; 2 holes tapped No. 4-40 in base on $\frac{3}{4}''$ mtg/c). (AF Part No. 2Z7591-33)	Channel "A" crystal switching	Sylvania 55342-1
K-207†	3380	701765-2415	RELAY, Crystal: same as K-206.	Channel "B" crystal switching	Sylvania 55342-1
K-208†	3380	701765-2415	RELAY, Crystal: same as K-206.	Channel "C" crystal switching	Sylvania 55342-1
K-209†	3380	701765-2415	RELAY, Crystal: same as K-206.	Channel "D" crystal switching	Sylvania 55342-1
K-210†	3380	701765-2415	RELAY, Crystal: same as K-206.	Channel "E" crystal switching	Sylvania 55342-1
K-211†	3380	701765-2415	RELAY, solenoid: same as K-206.	Channel "F" crystal switching	Sylvania 55342-1
K-212†	3380	701765-2415	RELAY, solenoid: same as K-206.	Channel "G" crystal switching	Sylvania 55342-1

K-213†	3380	701765-2415	RELAY, solenoid: same as K-206.	Channel "H" crystal switching	Sylvania 55342-1
L-201*			COIL, RF: tuning; single winding, single layer wound; 33 turns No. 39 AWG wire; 1¼" lg x $\frac{7}{16}$" OD; (bakelite form); part of Z-201.	Osc plate tuning	Sylvania 55137-1
L-202*			COIL, RF: tuning; single winding, single layer wound; 111½ turns No. 33 AWG wire; 1$\frac{5}{16}$" lg x 0.350" OD x $\frac{17}{64}$" ID; (bakelite form); part of T-201.	Fundamental amplr plate tuning	Sylvania 55012-1
L-203*			COIL, RF: same as L-202.	Fundamental amplr plate tuning	Sylvania 55012-1
L-204*			COIL, RF: same as L-202.	Harmonic gen grid tuning	Sylvania 55012-1
L-205	3340	310030001	COIL, RF: tuning; single winding; single layer wound; unshielded; 3 turns No. 14 AWG wire; ⅝" lg x ⅜" dia overall; (no form). (AF Part No. 3C323-129H)	Harmonic gen plate tuning	Sylvania 55086-1
L-206	3340	310030001	COIL, RF: same as L-205.	1st harmonic amplr plate tuning	Sylvania 55086-1
L-207	3340	310004996	COIL, RF: tuning; single winding; single layer wound; unshielded; 3 turns No. 14 AWG wire; $\frac{5}{16}$" lg x ⅜" dia overall; (no form; 1 term strapped to coil). (AF Part No. 3C323-129C)	Ant tuning	Sylvania 55038-1
L-208	3340	310020000	COIL, RF: tuning; single winding; single layer wound; unshielded; 3 turns No. 14 AWG wire; $\frac{5}{16}$" lg x ⅜" dia; (no form; self supporting coil by ends of wire). (AF Part No. 3C323-129G)	RF amplr grid tuning	Sylvania 55089-1
L-209	3340	310004999	COIL, RF: tuning; single winding; single layer wound; unshielded; 3 turns No. 14 AWG wire; $\frac{5}{16}$" lg x ⅜" dia; (no form; self supporting coil by ends of wire). (AF Part No. 3C323-129F)	RF amplr plate tuning	Sylvania 55087-1
L-210	3340	310020002	COIL, RF: injection; single winding; single layer wound; unshielded; 1 turn No. 12 AWG wire; 1⅜" lg x $\frac{3}{16}$" wd x ½" dia; (no form, self supporting coil by ends of wire). (AF Part No. 3C323-129J)	Osc injection	Sylvania 55090-1
L-211	3340	310020000	COIL, RF: same as L-208.	1st detector grid tuning	Sylvania 55089-1
L-212*			COIL, RF: tuning; two windings, single layer; 14 turns No. 26 AWG wire; 13½ turns No. 26 AWG wire; 2$\frac{7}{32}$" lg x $\frac{7}{16}$" dia; (bakelite form); part of T-202.		Sylvania 55129-1
L-212A*			COIL, RF: 14 turns section, pri; part of L-212.	1st detector plate tuning	Sylvania 55129-1

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† Used on ARC-3 and ARC-36 only.
* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
L-212B*			COIL, RF: 13½ turns section, secd; part of L-212.	1st IF grid tuning	Sylvania 55129-1
L-213*			COIL, RF: same as L-212; part of T-203.		Sylvania 55129-1
L-213A*			COIL, RF: 14 turns section, pri; part of L-213.	1st IF plate tuning	Sylvania 55129-1
L-213B*			COIL, RF: 13½ turns section, secd; part of L-213.	2nd IF grid tuning	Sylvania 55129-1
L-214*			COIL, RF: same as L-212; part of T-204.		Sylvania 55129-1
L-214A*			COIL, RF: 14 turns section, pri; part of L-214.	2nd IF plate tuning	Sylvania 55129-1
L-214B*			COIL, RF: 13½ turns section, secd; part of L-214.	3rd IF grid tuning	Sylvania 55129-1
L-215*			COIL, RF: tuning; two windings, single layer; 15 turns No. 28 AWG wire; 11½ turns No. 28 AWG; $2\frac{7}{32}$″ lg x $\frac{7}{16}$″ diam; (bakelite form); part of T-205.		Sylvania 55128-1
L-215A*			COIL, RF: 15 turns section, pri; part of L-215.	3rd IF plate tuning	Sylvania 55128-1
L-215B*			COIL, RF: 11½ turns section, secd; part of L-215.	Diode tuning	Sylvania 55128-1
O-201*			CAM, switch: stainless steel; $1\frac{1}{16}$″ dia x $\frac{1}{16}$″ thk; $\frac{21}{64}$″ d overall; (metal bushing for mtg on ⅜″ shaft with two No. 6-32 set screws; 12° projection, $\frac{1}{16}$″ h); part of Z-202.	Actuates S-201	Sylvania 55046-1
O-202*			CAM, switch: stainless steel; $1\frac{1}{16}$″ dia x $\frac{1}{16}$″ thk; $\frac{21}{64}$″ d overall; (metal bushing for mtg on ⅜″ shaft with two No. 6-32 set screws; 6° projection, $\frac{1}{16}$″ h); part of Z-202.	Actuates S-202	Sylvania 55045-1
O-203	1600	298320058	DRIVE ASSEMBLY, tuning; Al casting; natural finish; 28 v dc, ½ amp; $4\frac{1}{16}$″ lg x 2⅜″ wd x 5¼″ h overall; (includes B-201 and K-202; Al casting w/6 mtg holes tapped No. 8-32 on 1⅞″ x $1\frac{7}{16}$″ x $1\frac{43}{64}$″ mtg/c; has magnetic clutch and brake). (AF Part No. 2Z3876.66)	Tuning drive	Sylvania 56100-1
O-204	1600	291619837	GEAR ASSEMBLY, worm: steel; $5\frac{7}{16}$″ lg x 1″ wd x 1″ h overall; two threaded sections, each ¾″ lg, 15 threads per inch; shaft $\frac{3}{16}$″ dia x ¾″ lg one end, $\frac{5}{32}$″ dia x ½″ lg other end; cad pl mtg brkt with 4 holes tapped No. 6-32 on $\frac{7}{16}$″ x 3½″ mtg/c. (AF Part No. 2Z4875-45)	Capacitor drive	Sylvania 55035-1

O-205	1600	291619836	WORM, gear: CRS: cad pl; split gear; each section 1.35" dia x 1/32" thk x 3/8" d overall; (has a metal bushing for mtg on 3/8" shaft w/two No. 6-32 set screws; has a backlash spring). (AF Part No. 2Z4875-44)	Capacitor drive	Sylvania 55044-1
O-206	1600	291619836	WORM, gear: same as O-205.	Capacitor drive	Sylvania 55044-1
O-207*			DIAL, calibrated disk: molded black plastic 1 3/4" dia x 1/4" thk; 1/2" d overall; (calibrated on edge in freq from "100" to "156"; metal bushing for mtg on 1/4" shaft with two No. 6-32 setscrews).	Freq indicator	Sylvania 55228-1
O-210	1600	013677450	RETAINER, crystal holder: finger type; black phenolic molded on Al; 1 5/8" lg x 3/4" wd x 1/2" thk overall; mtd on pin by means of two 1/8" mtg hole. (AF Part No. 2Z7780-144)		Sylvania 56459-1 CE 25324
O-211* to O-218*	1600	014315050	SPRING: torsion type; crystal retainer; 0.028" dia stainless steel; 19/32" lg x 7/32" wd x 19/64" h overall; 6 RH turns; 1 end hooked; other end bent 90°; mts on pin thru center of coils. (AF Part No. 2Z8877.622)		Sylvania 55471-1 CE 25330
P-201*	8850	668021	CONNECTOR, male contact: straight; 8 banana type contacts; 1 5/16" dia x 45/64" h overall; (cylindrical Al body; mica insert; 1 1/8"-24 thd for mtg; supplied with mtg nut). (AF Part No. 2Z7226-152)	Test set connector (PL-152)	Sylvania 55670-1
P-202	8850	365750	CONNECTOR, male contact: 18 banana type contacts; 1 13/16" dia x 45/64" h overall; (cylindrical Al body; molded black bakelite insert; 1 5/8"-24 thd for mtg; 15/32" lg; supplied with mtg nut). (AF Part No. 2Z8799-109)	Power junction box connector (PL-153-A)	Sylvania 55916-1
R-201	3350	149000-1591	RESISTOR, fixed: composition; 252 ohms ±5%; 2 watt. (AF Part No. 3Z6025B2-1)	Osc heater shunt	Sylvania 55371-1
R-202	3350	149000-1591	RESISTOR, fixed: same as R-201.	1st detector heater shunt	Sylvania 55371-1
R-203	3350	493000-1473	RESISTOR, fixed: WW; 84 ohm ±5%; 5 watt; 1" lg x 5/16" dia; (vitreous enamel insulation; ceramic core; 2 radial solder lug terminals; 2 wire leads 1 1/4" min lg).	2nd detector heater shunt	Sylvania 55372-1
R-204	3350	101000-5261	RESISTOR, fixed: composition; 56,000 ohms ±10%; 1/2 watt. (AF Part No. 3RC20BF563K)	Osc grid leak	JAN RC20AF563K
R-205	3350	169000-4771	RESISTOR, fixed: composition; 12,000 ohms ±10%; 2 watt. (AF Part No. 3RC40BF123K)	Osc plate voltage dropping	JAN RC40AF123K
R-206*			RESISTOR, fixed: composition; 2,200 ohms ±5%; 1/2 w; 0.468" max lg x 0.249" max diam; (bakelite insulation; 2 axial wire leads; 1 1/2" lg); part of Z-201.	Fundamental amplr grid meter shunt	Sylvania 56508-1
R-207	3350	101000-5976	RESISTOR, fixed: composition; 330,000 ohms ±10%; 1/2 watt. (AF Part No. 3RC20BF334K)	Fundamental amplr grid leak	JAN RC20AF334K

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
R-208	3350	101000-2211	RESISTOR, fixed: composition; 100 ohms ±10%; ½ watt. (AF Part No. 3RC20BF101K)	Fundamental amplr grid isolating	JAN RC20AF101K
R-209	3350	101000-3111	RESISTOR, fixed: composition; 680 ohms ±5%; ½ watt. (AF Part No. 3RC20BF681J)	Fundamental amplr cathode bias	JAN RC20AF681J
R-210	3350	101000-3111	RESISTOR, fixed: same as R-209.	Fundamental amplr cathode bias	JAN RC20AF681J
R-211	3350	101000-2211	RESISTOR, fixed: same as R-208.	Fundamental amplr grid isolating	JAN RC20AF101K
R-212	3350	101000-4961	RESISTOR, fixed: composition; 39,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF393K)	Fundamental amplr screen voltage dropping	JAN RC20AF393K
R-213	3350	101000-4961	RESISTOR, fixed: same as R-212.	Fundamental amplr screen voltage dropping	JAN RC20AF393K
R-214	3350	131000-3551	RESISTOR, fixed: composition; 1000 ohms ±10%; 1 watt. (AF Part No. 3RC30BF102K)	Fundamental amplr plate voltage dropping	JAN RC30AF102K
R-215	3350	087000-7251	RESISTOR, fixed: composition; 3.3 megohms ±10%; ½ watt. (AF Part No. 3RC20BF335K)	Harmonic gen grid leak	JAN RC20AF335K
R-216	3350	101000-3251	RESISTOR, fixed: composition; 1000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF102J)	Harmonic gen grid meter shunt	JAN RC20AF102J
R-217	3350	101000-5491	RESISTOR, fixed: composition; 100,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF104K)	Harmonic gen screen voltage divider	JAN RC20AF104K
R-218	3350	101000-5761	RESISTOR, fixed: composition; 220,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF224K)	Harmonic gen screen voltage divider	JAN RC20AF224K
R-219	3350	131000-3931	RESISTOR, fixed: composition; 2200 ohms ±10%; 1 watt. (AF Part No. 3RC30AF222K)	Harmonic gen plate voltage dropping	JAN RC30AF222K
R-220	3350	101000-5881	RESISTOR, fixed: composition; 270,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF274K)	1st harmonic amplr grid leak	JAN RC20AF274K
R-221	3350	101000-4431	RESISTOR, fixed: composition; 10,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF103K)	1st harmonic amplr grid meter shunt	JAN RC20AF103K
R-222	3350	101000-4911	RESISTOR, fixed: composition; 33,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF333K)	1st harmonic amplr screen voltage dropping	JAN RC20AF333K

R-223	3350	169000-6211	RESISTOR, fixed: composition; 68,000 ohms ±10%; 2 watt. (AF Part No. 3RC40BF683K)	1st harmonic amplr screen voltage dropping	JAN RC40AF683K
R-224	3350	131000-3931	RESISTOR, fixed: same as R-219.	1st harmonic amplr plate voltage dropping	JAN RC30AF222K
R-225	3350	087000-7331	RESISTOR, fixed: composition; 4.7 megohms ±5%; ½ watt. (AF Part No. 3RC20BF475J)	Control tube grid voltage divider	JAN RC20AF475J
R-226	3350	101000-6131	RESISTOR, fixed: composition; 390,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF394J)	Control tube grid isolating	JAN RC20AF394J
R-227	3350	101000-6221	RESISTOR, fixed: composition; 470,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF474J)	2nd harmonic amplr grid leak	JAN RC20AF474J
R-228	3350	101000-4431	RESISTOR, fixed: same as R-221.	2nd harmonic amplr grid meter shunt	JAN RC20AF103K
R-229	3350	101000-5761	RESISTOR, fixed: same as R-218.	2nd harmonic amplr screen voltage dropping	JAN RC20AF224K
R-230	3350	381016540	RESISTOR, fixed: composition; 12 ohms, ±10%; ⅓ watt. (AF Part No. 3RC10BF120K)	2nd harmonic amplr plate isolating	JAN RC10BF120K
R-231	3350	131000-3931	RESISTOR, fixed: same as R-219.	2nd harmonic amplr plate voltage dropping	JAN RC30AF222K
R-232	3350	131000-4271	RESISTOR, fixed: composition; 3300 ohms ±10%; 1 watt. (AF Part No. 3RC30BF332K)	Tuning control relay current limiting	JAN RC30AF332K
R-233	3350	169000-4331	RESISTOR, fixed: composition; 6800 ohms ±10%; 2 watt. (AF Part No. 3RC40BF682K)	Tuning control relay current limiting	JAN RC40AF682K
R-234	3350	085000-1591	RESISTOR, fixed: composition; 22 ohms ±20%; ½ watt. (AF Part No. 3RC20AE220M)	Clutch-brake solenoid arc suppressor	JAN RC20AE220M
R-235	3350	101000-5491	RESISTOR, fixed: same as R-217.	RF amplr grid filter	JAN RC20AF104K
R-236	3350	101000-2511	RESISTOR, fixed: composition; 220 ohms ±5%; ½ watt. (AF Part No. 3RC20BF221J)	RF amplr cathode bias	JAN RC20AF221J
R-237	3350	101000-4431	RESISTOR, fixed: same as R-221.	RF amplr screen voltage divider	JAN RC20AF103K
R-238	3350	131000-6551	RESISTOR, fixed: composition; 56,000 ohms ±10%; 1 watt. (AF Part No. 3RC30BF563K)	RF amplr screen voltage divider	JAN RC30AF563K
R-239	3350	131000-5491	RESISTOR, fixed: composition; 18,000 ohms ±10%; 1 watt. (AF Part No. 3RC30BF183K)	RF amplr screen voltage divider	JAN RC30AF183K
R-241	3350	381016540	RESISTOR, fixed: same as R-230.	RF amplr grid isolating	JAN RC10BF120K
R-242	3350	131000-3931	RESISTOR, fixed: same as R-219.	RF amplr plate voltage dropping	JAN RC30AF222K

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
R-243	3350	101000-5491	RESISTOR, fixed: same as R-217.	1st detector grid leak	JAN RC20AF104K
R-244	3350	101000-4431	RESISTOR, fixed: same as R-221.	1st detector grid meter shunt	JAN RC20AF103K
R-245	3350	098000-4231	RESISTOR, fixed: composition; 6800 ohms ±5%; ½ watt. (AF Part No. 3RC20BF682J)	1st detector cathode bias	JAN RC20AF682J
R-246	3350	101000-5976	RESISTOR, fixed: same as R-207.	1st detector screen voltage dropping	JAN RC20AF334K
R-247	3350	099000-2751	RESISTOR, fixed: composition; 1000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF102K)	1st detector plate voltage dropping	JAN RC20AF102K
R-248	3350	101000-5491	RESISTOR, fixed: same as R-217.	1st IF amplr grid filter	JAN RC20AF104K
R-249	3350	101000-2721	RESISTOR, fixed: composition; 390 ohms ±5%; ½ watt. (AF Part No. 3RC20BF391J)	1st IF amplr cathode bias	JAN RC20AF391J
R-250	3350	101000-5641	RESISTOR, fixed: composition; 150,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF154K)	1st IF amplr screen voltage dropping	JAN RC20AF154K
R-251	3350	101000-5491	RESISTOR, fixed: same as R-217.	1st IF amplr AVC filter	JAN RC20AF104K
R-252	3350	099000-2751	RESISTOR, fixed: same as R-247.	1st IF amplr plate voltage dropping	JAN RC20AF102K
R-253	3350	101000-5491	RESISTOR, fixed: same as R-217.	2nd IF amplr grid filter	JAN RC20AF104K
R-254	3350	101000-2721	RESISTOR, fixed: same as R-249.	2nd IF amplr cathode bias	JAN RC20AF391J
R-255	3350	101000-5641	RESISTOR, fixed: same as R-250.	2nd IF amplr screen voltage dropping	JAN RC20AF154K
R-256	3350	099000-2751	RESISTOR, fixed: same as R-247.	2nd IF amplr plate voltage dropping	JAN RC20AF102K
R-257	3350	101000-2611	RESISTOR, fixed: composition; 270 ohms ±5%; ½ watt. (AF Part No. 3RC20BF271J)	3rd IF amplr cathode bias	JAN RC20AF271J
R-258	3350	131000-5491	RESISTOR, fixed: same as R-239.	3rd IF amplr screen voltage dropping	JAN RC30AF183K
R-259	3350	099000-2751	RESISTOR, fixed: same as R-247.	3rd IF amplr plate voltage dropping	JAN RC20AF102K

R-260	3350	101000-6241	RESISTOR, fixed: composition; 470,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF474K)	AVC diode load	JAN RC20AF474K
R-261	3350	101000-5881	RESISTOR, fixed: same as R-220.	AVC filter	JAN RC20AF274K
R-262	3350	099000-5471	RESISTOR, fixed: composition; 68,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF683J)	2nd detector diode load	JAN RC20AF683J
R-262†	3350	098000-5251	RESISTOR, fixed: composition; 62,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF623J)	2nd detector diode load	JAN RC20AF623J
R-263	3350	381169360	RESISTOR, fixed: composition; 39,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF393J)	2nd detector diode load	JAN RC20AF393J
R-263†	3350	101000-5121	RESISTOR, fixed: composition; 47,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF472J)	2nd detector diode load	JAN RC20AF473J
R-264	3350	101000-6341	RESISTOR, fixed: composition; 560,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF564K)	Noise limiter cathode isolating	JAN RC20AF564K
R-265	3350	101000-5881	RESISTOR, fixed: same as R-220.	Noise limiter pulse filter	JAN RC20AF274K
R-266	3350	087000-6741	RESISTOR, fixed: composition; 1 megohm ±10%; ½ watt. (AF Part No. 3RC20BF105K)	Audio AVC filter	JAN RC20AF105K
R-267	3350	098000-6511	RESISTOR, fixed: composition; 1 megohm ±5%; ½ watt. (AF Part No. 3RC20BF105J)	Squelch tube grid voltage divider	JAN RC20AF105J
R-267†	3350	128000-7195	RESISTOR, fixed: composition; 1,200,000 ohms ±5%; ½ watt.	Squelch tube grid voltage divider	JAN RC20GF125J
R-268	3350	101000-3251	RESISTOR, fixed: same as R-216.	Cathode follower load	JAN RC20AF102J
R-270	3350	098000-6511	RESISTOR, fixed: same as R-267.	Squelch tube voltage divider	JAN RC20AF105J
R-270†	3350	098000-6431	RESISTOR, fixed: composition; 820,000 ±5%; ½ watt.	Squelch tube voltage divider	JAN RC20GF824J
R-271	3350	101000-4411	RESISTOR, fixed: composition; 10,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF103J)	Squelch tube voltage divider	JAN RC20AF103J
R-272	3350	831500-2771	RESISTOR, variable: wire wound; 700 ohms ±10%; ½ watt; 3 term; body 1 9/32" dia x 41/64" thk; shaft ¼" dia x ½" lg; (linear taper; enclosed body; screw driver slot). (AF Part No. 3Z7270-2)	Squelch control	Sylvania 55321-1 CTS Type HT252
R-273	3350	101000-5711	RESISTOR, fixed: composition; 180,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF184K)	1st AF amplr grid isolating	JAN RC20AF184K
R-274	3350	087000-6981	RESISTOR, fixed: composition; 2.2 megohms ±5%; ½ watt. (AF Part No. 3RC20BF225J)	Squelch tube plate voltage dropping	JAN RC20AF225J

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† Used in Radio Receivers R-77B/ARC-3 and R-428B/ARC-36 with Serial Nos. greater than C-10,995 and in R-608/ARC-49.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
R-275	3350	101000-2791	RESISTOR, fixed: composition; 470 ohms ±5%; ½ watt. (AF Part No. 3RC20BF471J)	1st AF amplr bias	JAN RC20AF471J
R-276	3350	169000-6291	RESISTOR, fixed: composition; 82,000 ohms ±5%; 2 watt. (AF Part No. 3RC40BF823J)	Squelch tube voltage divider	JAN RC40AF823J
R-277 (Used on ARC-3 & ARC-36 only)	3350	101000-5681	RESISTOR, fixed: composition; 180,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF184J)	1st AF amplr plate voltage dropping	JAN RC20AF184J
R-278 (Used on ARC-3 and ARC-36 only)	3350	101000-5121	RESISTOR, fixed: composition; 47,000 ohms ±5%; ½ watt. (AF Part No. 3RC20BF473J)	1st AF amplr plate voltage dropping	JAN RC20AF473J
R-279	3350	099000-5471	RESISTOR, fixed: same as R-262.	1st AF amplr plate filter	JAN RC20AF683J
R-280	3350	101000-6151	RESISTOR, fixed: composition; 390,000 ohms ±10%; ½ watt. (AF Part No. 3RC20BF394K)	MF receiver input voltage divider	JAN RC20AF394K
R-281	3350	101000-6241	RESISTOR, fixed: same as R-260.	2nd AF amplr grid	JAN RC20AF474K
R-282	3350	101000-3461	RESISTOR, fixed: composition; 1800 ohms ±5%; ½ watt. (AF Part No. 3RC20BF182J)	2nd AF amplr cathode bias	JAN RC20AF182J
R-283	3350	087000-6741	RESISTOR, fixed: same as R-266.	AVC delay grid isolating	JAN RC20AF105K
R-284	3350	101000-4341	RESISTOR, fixed: composition; 8200 ohms ±5%; ½ watt. (AF Part No. 3RC20BF822J)	Degeneration feedback	JAN RC20AF822J
R-285	3350	101000-4341	RESISTOR, fixed: same as R-284.	AVC delay cathode bias	JAN RC20AF822J
R-286	3350	131000-6311	RESISTOR, fixed: composition 47,000 ohms ±10%; 1 watt. (AF Part No. 3RC30BF473K)	2nd AF amplr plate voltage dropping	JAN RC30AF473K
R-287	3350	101000-6241	RESISTOR, fixed: same as R-260.	AF output grid	JAN RC20AF474K
R-288	3350	131000-2911	RESISTOR, fixed: composition, 330 ohms ±5%; 1 watt. (AF Part No. 3RC30BF331J)	AF output cathode bias	JAN RC30AF331J
R-289	3350	131000-4271	RESISTOR, fixed: same as R-232.	MF receiver load	JAN RC30AF332K
R-290	3350	131000-4371	RESISTOR, fixed: composition; 3900 ohms ±10%; 1 watt. (AF Part No. 3RC30BF392K)	MF receiver load	JAN RC30AF392K

R-291	1600	388530600	TUBE, ballast: thermal resistor; MX-408/U; glass; 12 to 19.5v; 0.28 to 0.32 amp; T-9 bulb; octal socket; active element connected to terminals 2 and 7; 3 9/16″ lg overall. (AF Part No. 3Z6925-3.13)	Noise limiter heater voltage regulator	Sylvania 56419-1
R-292	3350	191000-3351	RESISTOR, fixed: composition; 680 ohms ±5%; 1 watt. (AF Part No. 3RC30BF681J)	Noise limiter heater shunt	JAN RC30AF681J
R-293†	3350	098000-7251	RESISTOR, fixed: composition, 4,700,000 ohms ±10%; ½ watt.	Cathode follower grid leak	JAN RC20GF475K
S-201 (Used on ARC-3 & ARC-36 only)	3360	287399936	CONTACT ASSEMBLY, switch: brass; cad pl; 2⅛″ lg x 13/32″ wd x 13/16″ h overall; (CRS bracket w/2 mtg slots ⅛″ wd x 21/32″ mtg/c; 1 solder lug term.). (AF Part No. 2Z3196-27)	Motor stopping switch	Sylvania 55033-1
S-202	3360	287399936	CONTACT ASSEMBLY, switch: same as S-201.	Starting relay switch	Sylvania 55033-1
S-203	3360	395323390	SWITCH, push: SPST; single section; bakelite body; 1 15/16″ lg x ¾″ dia overall; (2 amp, 32 v dc; non-locking momentary action, normally open; mts by threaded bushing ⅜″-32 x ⅜″ lg; 2 solder lug term.). (AF Part No. 3Z9824-83)	Motor switch	Sylvania 55319-1 Stackpole Type CT
S-204	3360	395511286	SWITCH, rotating: cam; 8 pole; 8 rotating cams w/adjustable contact springs; 9 molded black bakelite discs; 9 3/16″ lg x 1 11/16″ wd x 2″ h overall; (6 mtg holes 0.192″ dia on 3 7/64″, 1 9/16″, and 4 15/64″ horizontal mtg/c; 1¼″ vert mtg/c; 8 solder lug term.; calibrated in freq from 100-156; worm gear drive); p/o panel assembly A-214. (AF Part No. 3Z9826-53.1)		Sylvania 55214-1
S-204A			SWITCH, rotating cam; part of S-204.	Channel "A" freq selector	Sylvania 55214-1
S-204B			SWITCH, rotating cam; part of S-204.	Channel "B" freq selector	Sylvania 55214-1
S-204C			SWITCH, rotating cam; part of S-204.	Channel "C" freq selector	Sylvania 55214-1
S-204D			SWITCH, rotating cam; part of S-204.	Channel "D" freq selector	Sylvania 55214-1
S-204E			SWITCH, rotating cam; part of S-204.	Chamnel "E" freq selector	Sylvania 55214-1
S-204F			SWITCH, rotating cam: part of S-204.	Channel "F" freq selector	Sylvania 55214-1
S-204G			SWITCH, rotating cam; part of S-204.	Channel "G" freq selector	Sylvania 55214-1
S-204H			SWITCH, rotating cam; part of S-204.	Channel "H" freq selector	Sylvania 55214-1
T-201	3340	310004994	TRANSFORMER, Variable RF: wide band amplr; 3 windings; single layer wound; 111½ turns No. 33 AWG wire; rectangular Al shield can, caustic dipped; 1.834″ lg x 1.397″ wd x 2.50″ h; (3 bakelite forms, powdered iron cores; form 0.350″ dia x 1 15/16″ lg; adjustable iron cores; 3 screwdriver adjustments thru top of can; 2 holes tapped No. 8-32 in base; 1 3/16″ mtg/c; 4 solder lugs on bottom); includes C-216 and C-217. (AF Part No. 3C323-129A)	Fundamental amplr	Sylvania 55011-1

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† Used in Radio Receivers R-77B/ARC-3 and R-428B/ARC-36 with Serial Nos. greater than C-10,995 and in R-608/ARC-49.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
T-202	3340	297062314	TRANSFORMER, IF: 12 mc; input; shielded; $1\frac{1}{8}''$ lg x $1\frac{1}{8}''$ wd x 3″ h; (powdered iron cores; double tuned; adjustable iron cores; screwdriver adjustment on top and bottom; 2 holes tapped No. 6-32 in base; $\frac{3}{4}''$ mtg/c; 4 solder lugs on bottom); includes C-262, C-263, C-264 and C-265. (AF Part No. 2Z9641.196)	1st IF	Sylvania 55020-1
T-203	3340	297062313	TRANSFORMER, IF: 12 mc; interstage; shielded; $1\frac{1}{8}''$ lg x $1\frac{1}{8}''$ wd x 3″ h; (powdered iron cores; double tuned; adjustable iron cores; screwdriver adjustments on top and bottom; 2 holes tapped No. 6-32 in base; $\frac{3}{4}''$ mtg/c; 4 solder lugs on bottom); includes C-268, C-269, C-270, and C-271. (AF Part No. 2Z9641.195)	2nd IF	Sylvania 55135-1
T-204	3340	297062316	TRANSFORMER, IF: 12 mc; interstage; shielded $1\frac{1}{8}''$ lg x $1\frac{1}{8}''$ wd x 3″ h; (powdered iron cores; double tuned; adjustable iron cores; screwdriver adjustment on top and bottom; 2 holes tapped No. 6-32 in base; $\frac{3}{4}''$ mtg/c; 4 solder lugs on bottom); includes C-274, C-275, C-276. (AF Part No. 2Z9641.198)	3rd IF	Sylvania 55134-1
T-205	3340	297062315	TRANSFORMER, IF: 12 mc; output; shielded; $1\frac{1}{8}''$ lg x $1\frac{1}{8}''$ wd x 3″ h; (powdered iron cores; double tuned; adjustable iron cores; screwdriver adjustment on top and bottom; 2 holes tapped No. 6-32 in base; $\frac{3}{4}''$ mtg/c; 4 solder lugs on bottom); includes C-280, C-281, C-282, and C-283. (AF Part No. 2Z9641.197)	4th IF	Sylvania 55133-1
T-206	3340	297014664	TRANSFORMER, AF: output; pri 19,100 ohms, secd 600 ohms impedance when used on "HI" tap; pri 11,000 ohms; secd 50 ohms when used on "LO" tap; aluminum can; $2\frac{3}{16}''$ dia x $2\frac{3}{8}''$ h; (turns ratio of pri to secd 5.52 to 1, pri to secd tap 13.67 to 1; freq 300 to 4,000 cyc; 5 turret type term. on top; bracket mtg w/three $\frac{5}{32}''$ dia holes on 120° spacing; $1\frac{3}{32}''$ rad; impregnated for tropical use). (AF Part No. 2Z9632.349)	AF output	Sylvania 55320-1 Acme Elect T-7697
V-201*	3370	451000-9125	TUBE, electron: (AF Part No. 2J9002)	Osc	JAN 9002
V-202*	3370	286000-5645	TUBE, electron:	Fundamental amplr	JAN 5654/6AK5W

V-203*	3370	286000-5645	TUBE, electron: same as V-202.	Fundamental amplr	JAN 5654/6AK5W
V-204*	3370	286000-5645	TUBE, electron: same as V-202.	Harm gen	JAN 5654/6AK5W
V-205*	3370	286000-5645	TUBE, electron: same as V-202.	1st harmonic amplr	JAN 5654/6AK5W
V-206*	3370	286000-5645	TUBE, electron: same as V-202.	2nd harmonic amplr	JAN 5654/6AK5W
V-207*	3370	286000-1435	TUBE, electron: (AF Part No. 2J12SH7)	Tuning control	JAN 12SH7 or JAN 12SH7GT
V-208*	3370	286000-5645	TUBE, electron: same as V-202.	RF amplr	JAN 5654/6AK5W
V-209*	3370		TUBE, electron: (AF Part No. 2J9001)	1st detector	JAN 9001
V-210*	3370	790000-1815	TUBE, electron: (AF Part No. 2J12SG7)	IF amplr	JAN 12SG7
V-211*	3370	790000-1815	TUBE, electron: same as V-210.	2nd IF amplr	JAN 12SG7
V-212*	3370	790000-1815	TUBE, electron: same as V-210.	3rd IF amplr	JAN 12SG7
V-213*	3370	304000-1295	TUBE, electron: (AF Part No. 2J12H6)	2nd detector AVC	JAN 12H6
V-214*	3370	316000-1465	TUBE, electron: (AF Part No. 2J12SN7/GT)	Noise limiter & AF cathode follower	JAN 12SN7GT
V-215*	3370	316000-1455	TUBE, electron: (AF Part No. 2J12SL7/GT)	Squelch & 1st AF amplr	JAN 12SL7GT
V-216*	3370	316000-1465	TUBE, electron: same as V-214.	AVC delay & 2nd AF amplr	JAN 12SN7GT
V-217*	3370	286000-1335	TUBE, electron: (AF Part No. 2J12A6/GT)	AF output	JAN 12A6 or JAN 12A6GT
W-201*			CABLE, RF: Army-Navy Radio Frequency Cable RG-58/U; coaxial; flexible; characteristic impedance 51 ohms; 9¾″ lg; single No. 20 AWG solid copper axial conductor; solid dielectric; stabilized polyethylene; (outer conductor single braided copper shield; outer covering vinylite; 0.195″ OD; 160 w at 200 mc, 35 w at 3,000 mc); part of J-201.	Ant lead-in	Sylvania 55150-1
W-202	1600	292562141	LEAD, bare: copper; No. 12 AWG; solid; tinned; formed; $\frac{61}{64}$″ lg x ⅝″ wd x $\frac{5}{16}$″ h. (AF Part No. 2Z6050-14)	Injection coil feeder	Sylvania 55084-1
W-203	1600	292562140	LEAD, bare: copper, No. 12 AWG; solid; tinned; formed; 1$\frac{43}{64}$″ lg x ⅜″ wd x $\frac{5}{16}$″ h. (AF Part No. 2Z6050-13)	Injection coil feeder	Sylvania 55085-1

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
W-204††*			CABLE, RF: Radio Frequency Cable RG-58/U; coaxial; flexible; characteristic impedance 51 ohms; 19″ long; single No. 20 AWG solid copper axial conductor; solid dielectric, stabilized polyethylene; (outer conductor single-braided copper shield; outer covering vinylite; 0.195″; 160 w at 200 mc, 35 w at 3,000 mc); part of J-202.	Guard channel lead-in	Sylvania 56733-1
X-201	8850	883724	SOCKET, Tube: 7 contacts; miniature; mica-filled bakelite; ¾″ dia x 19/32″ h; (metal saddle; 2 inserts tapped No. 3-48 on ⅞″ mtg/c). (AF Part No. 2Z8657-3)	Mounts V-201	Sylvania 55036-1 Amphenol 78-7PT
X-202	8850	883724	SOCKET, Tube: same as X-201.	Mounts V-202	Sylvania 55036-1 Amphenol 78-7PT
X-203	8850	883724	SOCKET, Tube: same as X-201.	Mounts V-203	Sylvania 55036-1 Amphenol 78-7PT
X-204	8850	883724	SOCKET, Tube: same as X-201.	Mounts V-204	Sylvania 55036-1 Amphenol 78-7PT
X-205	8850	883724	SOCKET, Tube: same as X-201.	Mounts V-205	Sylvania 55036-1 Amphenol 78-7PT
X-206	8850	883724	SOCKET, Tube: same as X-201.	Mounts V-206	Sylvania 55036-1 Amphenol 78-7PT
X-207	8850	895820	SOCKET, Tube: std octal; mica filled bakelite; 1¼″ dia x ½″ h, excluding term., 13/16″ h overall; (mts by retainer ring, silver pl contacts). (AF Part No. 2Z8654.7)	Mounts V-207	Sylvania 55328-1 Amphenol 78-S8TM
X-208	8850	883724	SOCKET, Tube: same as X-201.	Mounts V-208	Sylvania 55036-1 Amphenol 78-7PT
X-209	8850	883724	SOCKET, Tube: same as X-201.	Mounts V-209	Sylvania 55036-1 Amphenol 78-7PT
X-210	8850	895820	SOCKET, Tube: same as X-207.	Mounts V-210	Sylvania 55328-1 Amphenol 78-S8TM

X-211	8850	895820	SOCKET, Tube: same as X-207.	Mounts V-211	Sylvania 55328-1 Amphenol 78-S8TM
X-212	8850	895820	SOCKET, Tube: same as X-207.	Mounts V-212	Sylvania 55328-1 Amphenol 78-S8TM
X-213	8850	89520	SOCKET, Tube: same as X-207.	Mounts V-213	Sylvania 55328-1 Amphenol 78-S8TM
X-214	8850	89520	SOCKET, Tube: same as X-207.	Mounts V-214	Sylvania 55328-1 Amphenol 78-S8TM
X-215	8850	89520	SOCKET, Tube: same as X-207.	Mounts V-215	Sylvania 55328-1 Amphenol 78-S8TM
X-216	8850	895820	SOCKET, Tube: same as X-207.	Mounts V-216	Sylvania 55328-1 Amphenol 78-S8TM
X-217	8850	895820	SOCKET, Tube: same as X-207.	Mounts V-217	Sylvania 55328-1 Amphenol 78-S8TM
X-218	8850	879692	SOCKET, Tube: 5 prongs; steatite; 1¼″ dia x $\frac{25}{32}$″ h overall; retainer ring mtg. (AF Part No. 2Z8675.13)	Mounts K-202	Sylvania 55641-1 Amphenol 49-SS5M
X-219 (Used on ARC-3 & ARC-36 only)	8850	872080	SOCKET, Crystal: 12 prongs; molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{41}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x 1⅜″ mtg/c; marked "A-B-C-D"). (AF Part No. 2Z8761-39)	Mounts xtals	Sylvania 55379-1 Eby 7965
X-220 (Used on ARC-3 & ARC-36 only)	8850	872550	SOCKET, Crystal: 12 prong; molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{41}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x 1⅜″ mtg/c; marked "E-F-G-H"). (AF Part No. 2Z8761-38)	Mounts xtals	Sylvania 55380-1 Eby 7966
X-221	8850	895820	SOCKET, Tube: same as X-207.	Mounts R-291	Sylvania 55328-1 Amphenol 78-S8TM
Y-201* to Y-208*			CRYSTAL UNIT, quartz; Sig C type CR-1A/AR, DC-11-A, DC-16-A, or DC-26-A; 8,000 to 8,727 kc.	Channel "A-H" crystals	
Z-201	1600	224439500	TUNING ASSEMBLY, RF: osc; 9 mc; Al can; 1⅛″ sq x 2″ h; 2 mtg holes tapped No. 6-32 in base; (includes C-209, C-210, L-201, and R-206; screwdriver adjustment for L-201 in bottom). (AF Part No. 2C8109)	Osc plate impedance	Sylvania 55132-1

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* Not available as a spare part, listed for reference only.

†† Used on Radio Receivers R-77A/ARC-3, R-77B/ARC-3, R-428A/ARC-36, R-428B/ARC-36, and R-608/ARC-49.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
Z-202	1600	224439540	TUNING ASSEMBLY, RF: 100 to 156 mc; 10″ lg x 7″ wd x 5½″ h overall; (includes C-203, C-218, C-219, C-220, C-221, C-223, C-224, C-225, C-227, C-228, C-229, C-247, C-248, C-249, C-251, C-253, C-254, C-256, C-257, C-259, C-260, C-261, E-201, E-202, J-201, P-201, L-205, L-206, L-207, L-208, L-209, L-210, L-211, O-201, O-202, O-206, R-201, R-217, R-218, R-219, R-222, R-224, R-226, R-229, R-230, R-231, R-235, R-237, R-238, R-239, R-241, R-242, R-243, R-245, S-201, S-202, W-201, W-202, W-203, X-204, X-205, X-206, X-208 and X-209); Al casting; 6 mtg holes $\frac{3}{16}$″ dia. (AF Part No. 2C8110)	Harmonic gen and RF tuning assembly	Sylvania 55023-1

MODEL: RADIO SET AN/ARC-36 **MAJOR ASSEMBLY: R-428/ARC-36, Parts Peculiar to R-428 only**

Reference Symbol	*Class Code*	*Serial Number*	*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
K-1000	3380	511125-9221	RELAY: Auxiliary and Regular Channel Selector; solenoid; 4PDT; $1\frac{13}{64}$″ lg x $\frac{11}{16}$″ wd x $1\frac{11}{64}$″ h approx overall; (16 ga palladium contacts; contact rating 28 vdc 100 ma; single wound coil, 15 vdc, 54 ma, 280 ohms; 4 holes tapped No. 3-48 in base on ⅜″ mtg/c; p/o UG-614A/U).	Regular or auxiliary channel switching	Sylvania 78660-1
K-1001	3380	511125-9221	RELAY: same as K-1000.	Regular or auxiliary channel switching	Sylvania 78660-1
P-1000	8850	589990	CONTACT ASSEMBLY: $6\frac{11}{32}$″ lg x 1⅜″ wd x 1¼″ h overall; (c/o 16 pin contact board assembly with 10 solder term.); p/o UG-614A/U.	Crystal socket adapter connector	Sylvania 79360-1
X-1000	8850	871756	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{43}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x 1⅜″ mtg/c; marked "A - B - C - D"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-1
X-1001	8850	871758	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{43}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x 1⅜″ mtg/c; marked "E - F - G - H"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-3
X-1002	8850	871759	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{43}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x 1⅜″ mtg/c; marked "A_1 - B_1 - C_1 - D_1"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-4

X-1003	8850	871757	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}''$ lg x $1\frac{21}{32}''$ wd x $\frac{43}{64}''$ h overall; (4 mtg holes $\frac{9}{64}''$ dia on $1\frac{9}{16}''$ x $1\frac{3}{8}''$ mtg/c; marked "E_1 - F_1 - G_1 - H_1"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-2
Y-1017* to Y-1032*			CRYSTAL UNIT, quartz: same as Y-201.	Channel crystals	

MODEL: RADIO SET AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER R-608/ARC-49, Parts Peculiar to R-608 only**

B-202	3360		SWITCH, Rotary Solenoid: 6 wafer; 12 position; spring silver alloy contact; coin silver alloy rotor blade; phenolic wafer; $4\frac{29}{64}''$ lg x $1\frac{9}{16}''$ wd overall; 4 mtg holes $\frac{5}{32}''$ dia on $1\frac{1}{4}''$ mtg/c; guide hole $\frac{11}{64}''$ dia on mtg plate; non-shorting type rotary contact blades on wafer No. 2 to No. 6; front and rear rotors connected on wafer No. 3 to No. 6; solder lug term.	Selects numbered crystal bank	Sylvania 80917-1
B-203	3380	650190-6945	SWITCH, Rotary Solenoid: 3 wafer; 12 position; silver alloy contacts and rotors; phenolic wafer; $3\frac{5}{64}''$ lg x $1\frac{9}{16}''$ wd overall; 4 mtg holes $\frac{5}{32}''$ dia on $1\frac{1}{4}''$ mtg/c; guide hole $\frac{11}{64}''$ dia on mtg plate; non-shorting type contact blades on wafer No. 2 and No. 3; wafer No. 1 front and rear rotors connected together; solder lug term.	Selects lettered crystal bank	Sylvania 80916-1
C-208	3330	055350277	CAPACITOR, fixed: ceramic; 1.5 mmf ±0.25 mmf; zero temp coef; 500 vdcw; $\frac{9}{16}''$ lg x $\frac{1}{4}''$ dia; (ceramic case; wax or varnish impregnation; two $1\frac{1}{4}''$ lg x No. 20 or No. 22 axial wire leads).	Osc feedback	JAN CC21CH1R5C
C-303	3330	057251938	CAPACITOR, paper: 100,000 mmf ±20%; 200 vdcw; $\frac{7}{8}''$ lg x $\frac{13}{32}''$ dia; (metal case; metal bracket $\frac{5}{16}''$ lg x $\frac{1}{4}''$ wd; $\frac{3}{16}''$ dia mtg hole; two $1\frac{5}{8}''$ lg x No. 20 axial wire leads).	Arc suppressor, relay	JAN CP10A1KC104M
C-304	3330	057251915	CAPACITOR, paper: 470,000 mmf ±50%; 300 vdcw; $1\frac{7}{8}''$ lg x $\frac{9}{16}''$ dia; (metal case; metal bracket $\frac{1}{2}''$ x $\frac{7}{16}''$; mtg hole $\frac{5}{32}''$ dia; two 3″ lg x No. 20 axial wire leads).	Arc suppressor, rotary solenoid	Sylvania 82975-1 Sprague P71174
C-305	3330	057251915	CAPACITOR, Paper: same as C-304.	Arc suppressor, rotary solenoid	Sylvania 82975-1 Sprague P71174
C-306	3330	312860270	CAPACITOR, fixed: ceramic; 5 mmf ±.5 mmf; 0 mmf/mf/deg C temp coef; 500 vdcw; 0.562″ max lg x 0.250″ max dia; (ceramic case; wax or varnish impregnation; 2 axial wire leads; $1\frac{1}{4}''$ min lg). (AF Part No. 3D9005-42)	Crystal loading	JAN CC21CH050D

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SET AN/ARC-49 **MAJOR ASSEMBLY: RADIO RECEIVER R-608/ARC-49, Parts Peculiar to R-608 only**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
E-206	8880	500477-1755	TERMINAL BOARD ASSEMBLY: 5 brass cadmium-plated post type terminals; molded bakelite; $1\frac{3}{8}$″ lg x $1\frac{3}{16}$″ wd x $\frac{3}{32}$″ thk; cadmium-plated CRS mtg bracket w/No. 6-32 tapped hole and $\frac{1}{8}$″ mtg ear on $\frac{1}{4}$″ mtg/c; (marked "R-280").	Mounts R-280	Sylvania 82611-1
H-202	1600	011575000	COVER, Crystal: aluminum, caustic dipped; $6\frac{31}{32}$″ lg x $5\frac{11}{64}$″ wd x $\frac{31}{32}$″ h overall; 4 holes $\frac{3}{32}$″ dia on $\frac{21}{32}$″ mtg/c on back for mtg hinge; 2 holes $\frac{1}{8}$″ dia on $2\frac{7}{16}$″ mtg/c on top; slot $\frac{5}{8}$″ lg x $\frac{1}{8}$″ wd on top near front edge; right end of slot bent down $\frac{1}{8}$″ x $\frac{1}{8}$″; 2 holes $\frac{7}{64}$″ dia on $\frac{3}{8}$″ mtg/c and 1 hole $\frac{1}{8}$″ dia on front end.	Cover, crystal compartment	Sylvania 80729-1
K-204	3380	552180-3155	RELAY, Cycling: solenoid; 2 contact piles, dpst; 1 normally open and 3 normally closed contacts; $1\frac{7}{16}$″ lg x $\frac{15}{16}$″ wd x $1\frac{11}{32}$″ h overall; (16 ga palladium contacts rated 28 vdc 100 ma; single wound coil rated 14 vdc 50 ma 280 ohms; special fast action; 2 mtg holes tapped No. 4-40 on $\frac{3}{4}$″ mtg/c).	Tuning system starting	Sylvania 80923-1
K-205	3380	552180-2212	RELAY, Lock-In: solenoid; dpst normally open; $1\frac{7}{16}$″ lg x $\frac{15}{16}$″ wd x $1\frac{1}{4}$″ h overall; (16 ga palladium contacts rated 28 vdc 100 ma; single wound coil, 14 vdc, 50 ma, 280 ohms; 2 mtg holes tapped No. 4-40 on $\frac{3}{4}$″ mtg/c).	Control tube lock-in	Sylvania 80922-1
R-278	3350	769400-4951	RESISTOR, Variable: composition; 250,000 ohms ±10%; $\frac{1}{2}$ watt, linear taper; $\frac{29}{32}$″ lg x $\frac{21}{32}$″ wd x $\frac{55}{64}$″ h overall; enclosure $\frac{3}{4}$″ dia x $\frac{23}{64}$″ h overall; slotted shaft, normal torque; mtg bushing $\frac{1}{4}$-32 x $\frac{3}{8}$″ lg; 3 solder lug term.	1st af plate voltage dropping	Sylvania 82606-1
S-202	1600	011193850	SWITCH ASSEMBLY, Cam: $4\frac{5}{8}$″ lg x $\frac{57}{64}$″ wd x $\frac{13}{32}$″ h overall; c/o cam switch mtg brkt; cam follower assy; contact arm assy; and locking plate.	Starting relay switch	Sylvania 80861-1
W-201	1600	010862119	CABLE ASSEMBLY, Antenna: c/o Radio Frequency Socket SO-239; connector hood, Part No. 55039; Radio Frequency Cable RG-58/U, 11″ lg; and bracket.	Antenna lead in	Sylvania 81146-1

X-222	1600		PANEL, Crystal Mounting: Type MFE phenolic; $6\frac{9}{16}$" lg x $3\frac{3}{8}$" wd x $\frac{21}{64}$" thk overall; notch 1" lg x $\frac{3}{32}$" wd on one side; 4 holes $\frac{5}{32}$" dia on $1\frac{9}{16}$" x $6\frac{1}{8}$" mtg/c; 96 phosphor bronze contact pins, cad pl; marked, "A - B - C - D" at ends and "1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12" four places.	Crystal mounting panel	Sylvania 80773-2
Y-201* to Y-248*			CRYSTAL UNIT CR-18/U.	Channel crystals	

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49

MAJOR ASSEMBLY:
POWER JUNCTION BOX J-68/ARC-3 AND J-68A/ARC-3

401-499 series	1600	347541000	POWER JUNCTION BOX J-68/ARC-3: plate and filament supply; max output 410 v dc @ 325 ma, 210 v dc @ 125 ma, and 28 v dc @ 4 amp; input 28 v dc @ 13.5 amp; $10\frac{1}{4}$" lg x $8\frac{1}{2}$" wd x 7" h; (built in d-c filter; one $1\frac{1}{8}$" threaded outlet, three $1\frac{5}{8}$" threaded outlets).	Supply power for receiver and transmitter and interconnections	Sylvania 55871-1
401-499 series	1600	012490200	POWER JUNCTION BOX J-68A/ARC-3: plate and filament supply; max output 410 v dc @ 325 ma, 210 v dc @ 125 ma, and 28 v dc @ 4 amp; input 28 v dc @ 13.5 amp; $10\frac{1}{4}$" lg x $8\frac{1}{2}$" wd x 7" h; (built in d-c filter; one $1\frac{1}{8}$" threaded outlet, three $1\frac{5}{8}$" threaded outlets).	Supply power for receiver and transmitter and interconnections	Sylvania 77155-1
	1600	293346524	MOUNTING BASE, MT-236B/ARC-3: $10\frac{1}{8}$" lg x $8\frac{1}{2}$" wd x $2\frac{3}{16}$" h overall; extruded center cut-out 5" lg x $3\frac{1}{2}$" wd; (c/o mtg plate w/4 snapslide fastener studs; 2 mtg base channels 10" lg x $2\frac{1}{2}$" wd x $\frac{5}{16}$" h; 2 ground straps; vibration mounts, A-401, A-402, A-403, A-404); marked "MT-236B/ARC-3." (AF Part No. 51D13674-1)	Mounts power junction box	Sylvania 77801-1
A-401	6600	574869-3	MOUNT, Vibration: round; load range $2\frac{1}{4}$ to $4\frac{1}{2}$ lb; $1\frac{1}{2}$" h approx overall; rubber cushion; hex center post tapped No. 8-32 NC-2B thd, $\frac{9}{32}$" deep; alum cup-shaped holder; square base $1\frac{13}{16}$" x $1\frac{13}{16}$"; base attached to holder by 4 alum grommets approx $\frac{3}{16}$" ID x $\frac{1}{8}$" h mounted in corners on $1\frac{3}{8}$" centers; part of mounting base MT-236B/ARC-3.	Mounts MT-236B/ARC-3	Sylvania 77808-1 Barry 770-4G
A-402	6600	574869-34	MOUNT, Vibration: (same as item 169 except load range 3 to 6 lb; part of Mounting Base MT-236B/ARC-3).	Mounts MT-236B/ARC-3	Sylvania 77808-2 Barry 770-6C
A-403	6600	574869-3	MOUNT, Vibration: same as A-401.	Mounts MT-236B/ARC-3	Sylvania 77808-1 Barry 770-4G
A-404	6600	574869-34	MOUNT, Vibration: same as A-402.	Mounts MT-236B/ARC-3	Sylvania 77808-2 Barry 770-6C
A-405			BRACKET ASSEMBLY, relay: "L" shape; CRS, cad pl; assembled with molded bakelite board; $2\frac{27}{32}$" lg x $\frac{3}{4}$" wd x $2\frac{9}{16}$" h overall; (3 mtg holes, tapped No. 6-32 on $2\frac{3}{4}$ x $\frac{1}{4}$" mtg/c; marked "K-403," "K-405," "K-404" and "DO NOT BURNISH RELAY CONTACTS WHEN POWER IS ON").	Mounts Relays K-403, K-404, K-405	Sylvania 55253-1

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49

MAJOR ASSEMBLY:
POWER JUNCTION BOX J-68/ARC-3 AND J-68A/ARC-3

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
C-401	3330	316958395	CAPACITOR, fixed: paper; 1 mf +40% −15%; 200 vdcw; 2″ lg x 1¾″ wd x 1⅛″ max thk; (metal case; hermetically sealed; mineral oil impregnation; one solder lug type term. on side; 2 mtg lugs with $\frac{3}{16}$″ dia holes on 2⅜″ mtg/c). (AF Part No. 3DB1-83)	Transmitter dynamotor input filter	JAN CP53B1EF105J
C-402	3330	316772005	CAPACITOR, fixed: paper; 850,000 mmf +30% −10%; 600 vdcw; 1$\frac{15}{32}$″ h x 1$\frac{19}{32}$″ dia; (metal case; hermetically sealed; mineral oil impregnation; 1 solder lug type term. on top; 3 mtg feet with No. 6-32 tapped holes; 120° spacing on ½″ rad). (AF Part No. 3DA850-2)	Transmitter dynamotor output filter	Sylvania 55850-1 Sprague P4481
C-403	3330	317371205	CAPACITOR, fixed: dry electrolytic; 8 mf +40% −10%; 500 vdcw; 2″ lg x 1¾″ wd x 1$\frac{1}{16}$″ max thk; (metal case; hermetically sealed; 2 term.; 2 mtg lugs with $\frac{3}{16}$″ dia holes on 2⅜″ mtg/c). (AF Part No. 3DB8-154)	Transmitter dynamotor output filter	Sylvania 55844-1 Aerovox LBT-EN-500 V.
C-404	3330	317536510	CAPACITOR, fixed: dry electrolytic; 25 mf +40% −10%; 300 vdcw; 3$\frac{13}{16}$″ max lg x 1⅜″ dia; (metal case; hermetically sealed; filled with potting compound; 2 solder lug type term. on 1 end of can spaced ¾″ apart, $\frac{7}{16}$″ lg; mts by clamp not furnished). (AF Part No. 3DB25-60)	Receiver dynamotor output filter	Sylvania 55910-1 Aerovox LE-EP-300 V.
C-405	3330	316776235	CAPACITOR, fixed: paper; 250,000 mmf +20% −10%; 400 vdcw; 1⅞″ lg x ¾″ dia; (metal case; hermetically sealed; mineral oil impregnation; 1 term. on top; 1 mtg hole $\frac{5}{32}$″ dia.) (AF Part No. 3DA250-207)	Receiver dynamotor output filter	Sylvania 55908-1 Sprague P11266
C-406	3330	316776235	CAPACITOR, fixed: same as C-405.	Receiver dynamotor input filter	Sylvania 55908-1 Sprague P11266
C-407	3330	316772005	CAPACITOR, fixed: same as C-402.	Receiver dynamotor input filter	Sylvania 55850-1 Sprague P4481
D-401	1600	337837500	DYNAMOTOR UNIT DY-21/ARC-3: xmtr plate supply; output 410 v dc, 325 ma; input 27 v dc, 7.4 amp; 8,500 rpm; (7$\frac{51}{64}$″ lg x 3$\frac{15}{32}$″ wd x 3$\frac{15}{16}$″ h overall; aluminum mtg plate; 4 mtg holes, 0.353″ dia with snapslide locks on 5¾″ x 2½″ mtg/c; 3 pin socket).	Transmitter "B" supply	Sylvania 55885-1
	1600	010231535	ARMATURE, dynamotor shaft with bearings: 7.109″ long x 2.060″ dia; for use in dynamotor DY-21/ARC-3 Electrolux Appl DY-21/ARC-3.	Armature for dynamotor DY-21/ARC-3	Sylvania 55993-1

D-402	1600	337837590	DYNAMOTOR UNIT DY-22/ARC-3: rec plate supply; output 210 v dc, 125 ma; input 28 v dc, 1.94 amp; 8,500 rpm; ($6\frac{17}{32}$" lg x $3\frac{15}{32}$" wd x $3\frac{15}{16}$" h overall; aluminum mtg plate; 3 mtg holes, 0.353" dia with snapslide locks on 2⅝" x $5\frac{25}{32}$" mtg/c; 3 pin socket).	Receiver "B" supply	Sylvania 55883-1
	1600	010231540	ARMATURE, dynamotor shaft with bearings: 5.105" long x 2.060" dia; for use in dynamotor DY-22/ARC-3 Electrolux Appl DY-22/ARC-3.	Armature for dynamotor DY-22/ARC-3	Sylvania 55999-1
E-401			HOLDER, fuse: extractor post type; $2\frac{3}{32}$" lg x $\frac{11}{16}$" dia overall; (black molded phenolic case and cap; cap marked with CCW arrow and "FUSE"; ½-24 x ½" lg thd on case; ½-24 hex nut, int tooth lock washer and neoprene washer for mtg; 2 brass terminals hot tin dipped).	Mounts receiver fuse	Sylvania 77150-1
E-401†	8870	400000-555	HOLDER, fuse: block type; for two 1" lg x ¼" dia cartridge fuses; $\frac{3}{32}$" bakelite base with phosphor bronze clip; $3\frac{7}{32}$" lg x $\frac{23}{32}$" wd x $\frac{9}{16}$" h overall; 2 mtg holes 0.128" dia on 1¾" mtg/c; 2 solder lug type term.; (marked "½A," "250 V," "REC," and "SPARE"). (AF Part No. 3Z2880-7.1)	Mounts receiver fuse	Sylvania 55876-1
E-402			HOLDER, fuse: same as E-401.	Mounts transmitter fuse	Sylvania 77150-1
E-402†	8870	404000-555	HOLDER, fuse: block type; for two 1" lg x ¼" dia cartridge fuses; $\frac{3}{32}$" bakelite base with phosphor bronze clips; $3\frac{7}{32}$" lg x $\frac{23}{32}$" wd x $\frac{9}{16}$" h overall; 2 mtg holes 0.128" dia on 1¾" mtg/c; 2 solder lug type terms; (marked "½ A," "250 V," "Trans," and "SPARE"). (AF Part No. 3Z2880-7)	Mounts transmitter fuse	Sylvania 55877-1
E-403	1600	010430461	BRUSH, electrical contact: LV neg commutator brush; 30 vdc, 7.5 amp; carbon rectangular shape $\frac{9}{16}$" lg x $\frac{5}{16}$" wd x $\frac{3}{16}$" thk; mtd by term connected to brush by flex copper wire and spring 1⅛" lg; commutator end concave; stamped "—"; p/o A/N Dynamotor Units DY-21/ARC-3 and DY-22/ARC-3. (AF Part No. 3H525-74)	Transmitter dynamotor low voltage brush	Sylvania 55994-1
E-404	1600	010430461	BRUSH, electrical contact: same as E-403.	Transmitter dynamotor low voltage brush	Sylvania 55994-1
E-405	1600	010430464	BRUSH, electrical contact: HV positive commutator brush; carbon; 500 v dc, 350 ma; rectangular shape ½" lg x ¼" wd x $\frac{3}{32}$" thk; mtd by term. connected to brush by flex copper wire and spring 1⅛" lg; commutator end concave; stamped "+"; p/o A/N Dynamotor Units DY-21/ARC-3 and DY-22/ARC-3. (AF Part No. 3H525-75)	Transmitter dynamotor high voltage brush	Sylvania 55994-2
E-406	1600	010430464	BRUSH, electrical contact: same as E-405.	Transmitter dynamotor high voltage brush	Sylvania 55994-2
E-407	1600	010430461	BRUSH, electrical contact: same as E-403.	Receiver dynamotor low voltage brush	Sylvania 55994-1

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† Used on Power Junction Box J-68/ARC-3 only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49

MAJOR ASSEMBLY:
POWER JUNCTION BOX J-68/ARC-3 AND J-68A/ARC-3

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
E-408	1600	010430461	BRUSH, electrical contact: same as E-403.	Receiver dynamotor low voltage brush	Sylvania 55994-1
E-409	1600	010430464	BRUSH, electrical contact: same as E-405.	Receiver dynamotor high voltage brush	Sylvania 55994-2
E-410	1600	010430464	BRUSH, electrical contact: same as E-405.	Receiver dynamotor high voltage brush	Sylvania 55994-2
E-411	1600	333015170	WASHER, Insulator: round; molded black bakelite; ⅜″ OD x .140″ ID x ⅛″ thk; wax impregnated. (AF Part No. 3G1838-6.34)	Insulates R-401	Sylvania 55636-1
E-412	1600	333015170	WASHER, Insulator: round; same as E-411.	Insulates R-401	Sylvania 55636-1
F-401	8870	112000-728	FUSE, cartridge: ½ amp, 250 V; 1 time; glass body; ferrule ends ¼″ dia x ¼″ lg; overall dimen 1″ lg x ¼″ dia. (AF Part No. 3Z2595.6)	Transmitter "B" fuse	Sylvania 55924-1 Littelfuse 1007
F-402	8870	112000-728	FUSE, cartridge: same as F-401.	Receiver "B" fuse	Sylvania 55924-1 Littelfuse 1007
H-401†	8870	072000-555	COVER, fuse: Al, clear anodized; 3 5/16″ lg x 9/16″ wd x 11/16″ h; (1 mtg hole 0.226″ dia with snap-slide lock). (AF Part No. 3Z1721-1)	Transmitter fuse cover	Sylvania 55880-1
H-402†	8870	072000-555	COVER, fuse: same as H-401.	Receiver fuse cover	Sylvania 55880-1
K-401	3380	506120-2455	RELAY, "ON-OFF" Power: hermetically sealed; SPST; 2 contacts in parallel; normally open; 2⅛″ lg x 1″ wd x 2 1/16″ h overall; (contact rating 28 v dc, 50 amp make, 10 amp break; single wound coil, 14 v dc, 250 ohms); 2 extruded mtg holes in bracket, tapped No. 6-32 on 47/64″ mtg/c.	Heater & receiver dynamotor on-off	Sylvania 67435-1
K-401††	3380	299839108	RELAY, general purpose: SPST, two contacts in series, normally open; 1½″ lg x 1⅛″ wd x 1 7/32″ h overall; (¼″ silver contacts; contact rating 28 v dc, 10 amp; single wound coil, 14 v dc 56 ma, 250 ohms; two mtg holes tapped No. 4-40 on 57/64″ mtg/c).	Heater & receiver dynamotor on-off	Sylvania 55837-1
K-402	3380	506120-2455	RELAY, "ON-OFF" power: same as K-401.	Transmitter dynamotor on-off	Sylvania 67435-1

K-402††			RELAY, general purpose: same as K-401†.	Transmitter dynamotor on-off	Sylvania 55837-1
K-403	3380	701480-2515	RELAY, solenoid: SPST, normally open; $1\frac{7}{16}''$ lg x $\frac{57}{64}''$ wd x $1\frac{5}{16}''$ h overall; (16 ga palladium contacts; rated 28 v dc, 100 ma; single wound coil, 14 v dc, 50 ma, 280 ohms; special high voltage insulation; 2 mtg holes tapped No. 4-40 on $\frac{47}{64}''$ mtg/c). (AF Part No. 2Z7585-113)	Transmitter control tube time delay	Sylvania 55251-1
K-404	3380	555120-9115	RELAY, solenoid: general purpose; 3A; $1\frac{7}{16}''$ lg x $\frac{57}{64}''$ max wd x $1\frac{1}{2}''$ h overall; (16 ga palladium contacts; rated 28 v dc, 100 ma; single wound coil, 14 v dc; 50 ma, 280 ohm; coil impregnated for tropical use; 2 mtg holes tapped No. 4-40 on $\frac{47}{64}''$ mtg/c). (AF Part No. 2Z7591-34)	Control tube heaters time delay	Sylvania 55252-1 Cookeco 452
K-405	3380	701480-2515	RELAY, Solenoid: same as K-403	Receiver control tube time delay	Sylvania 55251-1
K-406	3380	555120-4735	RELAY, solenoid: SPDT: $1\frac{7}{16}''$ lg x $\frac{57}{64}''$ wd x $1\frac{15}{32}''$ h overall; (16 ga palladium contacts, rated 28 v dc, 100 ma; single wound coil, 14 v dc, 50 ma, 280 ohm; fast action; 2 mtg holes tapped No. 4-40 on $\frac{47}{64}''$ mtg/c). (AF Part No. 2Z7585-111)	Switches headsets	Sylvania 55836-1
L-401	3340	310020003	COIL, RF: choke; single winding, 4 layer; unshielded; 56 turns No. 12 AWG wire; $1\frac{21}{32}''$ lg x $1\frac{1}{2}''$ dia; (bakelite form; powdered iron core; axial hole through center of form $\frac{5}{32}''$ dia; 2 wire loop term. on top; varnish impregnation). (AF Part No. 3C323-129K)	Transmitter dynamotor input choke	Sylvania 55881-1
L-402	3340	307655334	COIL, AF: filter; single winding; 580 mh; 325 ma, 45 ohms; $1\frac{7}{8}''$ dia x $2\frac{3}{8}''$ h; (2,000 v rms insulation test; Al can; 3 mtg holes tapped No. 6-32, 120° spacing on $\frac{17}{32}''$ rad; compound filled; hermetically sealed; 2 solder lug type term. on bottom). (AF Part No. 3C323-20J)	Transmitter dynamotor output choke	Sylvania 55840-1 Acme Electric T 7698
L-403	3340	310000145	COIL, AF: filter; single winding; 1 hy; 125 ma, 78 ohms; $1\frac{1}{2}''$ dia x $1\frac{17}{32}''$ h; (1500 v rms insulation test; Al can; 3 mtg holes tapped No. 6-32, 120° spacing on $\frac{17}{32}''$ rad; compound filled; hermetically sealed; 2 solder lug type term. on bottom). (AF Part No. 3C323-20K)	Receiver dynamotor output filter	Sylvania 55841-1 Acme Electric T 6799
L-404	3340	310004998	COIL, RF: choke; single winding, four layer, unshielded; 80 turns No. 18 AWG wire; 130 mh; $1\frac{1}{4}''$ lg x $1\frac{1}{16}''$ dia; (bakelite form; powdered iron core; through mtg hole $\frac{5}{32}''$ dia; 2 solder lug term. on top; varnish impregnation). (AF Part No. 3C323-129E)	Receiver dynamotor input choke	Sylvania 55882-1

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† Used on Power Junction Box J-68/ARC-3 only.

†† Used on Power Junction Box J-68/ARC-3 and on early production of J-68A/ARC-3.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AN/ARC-36, AND AN/ARC-49

MAJOR ASSEMBLY:
POWER JUNCTION BOX J-68/ARC-3 AND J-68A/ARC-3

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
O-401	1600	010943299	CAP, contact brush: molded bakelite; 5/8″ dia x 0.318″ h; (metal insert threaded 7/16-32 UNEF-2B for mtg; straight knurl). (AF Part No. 3H683-9)	Transmitter dynamotor low voltage brush cap	Sylvania 55891-1
O-402	1600	010943299	CAP, contact brush: same as O-401.	Transmitter dynamotor low voltage brush cap	Sylvania 55891-1
O-403	1600	010943302	CAP, contact brush: molded bakelite; 9/16″ dia x 0.318″ h; (metal insert, threaded 3/8-32 UNEF-2B for mtg; straight knurl). (AF Part No. 3H683-10)	Transmitter dynamotor high voltage brush cap	Sylvania 55891-2
O-404	1600	010943302	CAP, contact brush: same as O-403.	Transmitter dynamotor high voltage brush cap	Sylvania 55891-2
O-405	1600	010943299	CAP, contact brush: same as O-401.	Receiver dynamotor low voltage brush cap	Sylvania 55891-1
O-406	1600	010943299	CAP, contact brush: same as O-401.	Receiver dynamotor low voltage brush cap	Sylvania 55891-1
O-407	1600	010943302	CAP, contact brush: same as O-403.	Receiver dynamotor high voltage brush cap	Sylvania 55891-2
O-408	1600	010943302	CAP, contact brush: same as O-403.	Receiver dynamotor high voltage brush cap	Sylvania 55891-2
P-401	8850	667960	CONNECTOR, male contact: 3 banana type contacts; 1 5/16″ dia x 53/64″ lg; (cylindrical Al body; molded black bakelite insert; 1 1/8″-24 thd for mtg; 15/32″ lg; supplied with mtg nut). (AF Part No. 2Z8800-40)	Battery connection	Sylvania 55915-1
P-402	8850	588880	CONNECTOR, male contact: 16 banana type contacts: 1 13/16″ dia x 45/64″ h overall; (cylindrical Al body; molded black bakelite insert; 1 5/8″-24 thd for mtg; 15/32″ lg; supplied with mtg nut). (AF Part No. 2Z8800-41)	Transmitter connection	Sylvania 55494-1
P-403	8850	605629	CONNECTOR, male contact: 24 round male contacts; 1 3/4″ sq x 1 11/32″ thk, less contacts: (cylindrical Al body; 4 mtg holes, 0.147″ dia on 1 3/8″ sq mtg/c, bushing threaded 1 1/2″-18). AN-3102-24-28p. (AF Part No. 2Z3044-3)	Control box connection	Sylvania 55918-1

P-404	8850	365750	CONNECTOR, male contact: 18 banana type contacts; $1\frac{13}{16}$″ dia x $\frac{45}{64}$″ h overall; (cylindrical Al body; molded black bakelite insert; $1\frac{5}{8}$″-24 thd for mtg; $\frac{15}{32}$″ lg; supplied with mtg nut). (AF Part No. 2Z8799-109)	Receiver connection	Sylvania 55916-1
P-405*			CONNECTOR, male contact; 3 banana type contacts; $1\frac{5}{16}$″ dia x $\frac{15}{64}$″ thk, less contacts; (aluminum mtg ring; mica insert).	Transmitter dynamotor connection	Sylvania 55913-1
P-406*			CONNECTOR, male contact; same as P-405.	Receiver dynamotor connection	Sylvania 55913-1
R-401	3350	505000-3261	RESISTOR, fixed: wire wound; 100 ohms ±5%; 5 watt; 1″ lg x $\frac{5}{16}$″ dia; (vitreous enamel insulation; ceramic core; 2 term.; $\frac{15}{32}$″ lg). (AF Part No. 3RW18314)	Time delay relay shunt	JAN RW30G101J
R-402	3350	191000-3351	RESISTOR, fixed: composition; 680 ohms ±5%; 1 watt. (AF Part No. 3RC30BF681J)	Time delay relay shunt	JAN RC30AF681J

MODEL: RADIO SETS AN/ARC-3, AND AN/ARC-36 MAJOR ASSEMBLY: CONTROL BOXES C-118/ARC-3 AND C-118A/ARC-3

501-599 series	1600	211939981	CONTROL BOX C-118/ARC-3: Al; black enamel; 7″ lg x $2\frac{5}{8}$″ wd x 6″ h overall; (8 red buttons, marked "A-B-C-D-E-F-G-H"; 1 black button marked "OFF"; 2 jacks marked "TEL" and "MIC"; push button marked "TONE"; connector marked "U-16/U"; reversible mtg brkt; 2 holes 0.353″ dia with snapslide locks on $3\frac{1}{8}$″ mtg/c).	Controls Radio Sets AN/ARC-3 and AN/ARC-36	Sylvania 56220-1
501-599 series	1600	211939981	CONTROL BOX C-118A/ARC-3: Al; black enamel; 7″ lg x $2\frac{5}{8}$″ wd x 6″ h overall; (8 red buttons, marked "A-B-C-D-E-F-G-H"; 1 black button marked "OFF"; 2 jacks marked "TEL" and "MIC"; push button marked "TONE"; connector marked "U-16/U"; reversible mtg brkt; 2 holes 0.353″ dia with snapslide locks on $3\frac{1}{8}$″ mtg/c).	Controls Radio Sets AN/ARC-3 and AN/ARC-36	Sylvania 56220-2
A-501*			BRACKET, mounting: "L" shape; aluminum; $4\frac{7}{8}$″ lg x $\frac{13}{16}$″ wd x $1\frac{7}{32}$″ h; (2 holes 0.353″ dia with snapslide locks for mtg on $3\frac{1}{8}$″ mtg/c).	Secures control box to mount	Sylvania 56218-1
E-501	3300	286415038	BUTTON, push: aluminum; red anodized; $\frac{3}{4}$″ dia x $\frac{11}{16}$″ lg; (marked "A" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.24)	Channel "A" push button	Sylvania 56201-1 Trico F 4378-1
E-502	3300	286415043	BUTTON, push: aluminum; red anodized; $\frac{3}{4}$″ dia x $\frac{11}{16}$″ lg; (marked "B" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.29)	Channel "B" push button	Sylvania 56201-2 Trico F 4378-2

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* Not available as a spare part, listed for reference only.

TABLE OF PARTS (Continued)

MODEL: RADIO SETS AN/ARC-3, AND AN/ARC-36 **MAJOR ASSEMBLY: CONTROL BOXES C-118/ARC-3 AND C-118A/ARC-3**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
E-503	3300	286415040	BUTTON, push: aluminum; red anodized; ¾″ dia x 11/16″ lg; (marked "C" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.26)	Channel "C" push button	Sylvania 56201-3 Trico F 4378-3
E-504	3300	286415039	BUTTON, push: aluminum; red anodized; ¾″ dia x 11/16″ lg; (marked "D" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.25)	Channel "D" push button	Sylvania 56201-4 Trico F 4378-4
E-505	3300	286415037	BUTTON, push: aluminum; red anodized; ¾″ dia x 11/16″ lg; (marked "E" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.23)	Channel "E" push button	Sylvania 56201-5 Trico F 4378-5
E-506	3300	286415036	BUTTON, push: aluminum; red anodized; ¾″ dia x 11/16″ lg; (marked "F" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.22)	Channel "F" push button	Sylvania 56201-6 Trico F 4378-6
E-507	3300	286415041	BUTTON, push: aluminum; red anodized; ¾″ dia x 11/16″ lg; (marked "G" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.27)	Channel "G" push button	Sylvania 56201-7 Trico F 4378-7
E-508	3300	286415042	BUTTON, push: aluminum; red anodized; ¾″ dia x 11/16″ lg; (marked "H" in fluorescent green lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.28)	Channel "H" push button	Sylvania 56201-8 Trico F 4378-8
E-509	3300	286415044	BUTTON, push: aluminum; black anodized; ¾″ dia x 11/16″ lg; (marked "OFF" in white lacquer; 1 No. 6-32 set screw for mtg). (AF Part No. 2Z1480.30)	On-off button	Sylvania 56201-9 Trico F 4378-9
E-510	8880	500377-6855	BOARD, terminal: 3 brass cadmium-plated post type terminals; molded bakelite; 2⅜″ lg x ⅜″ wd x 3/32″ thk; (2 metal inserts tapped No. 4-40; mtd on 1⅛″ mtg/c). (AF Part No. 2Z9403.163)	Mounts resistor R-501	Sylvania 55980-1
J-501	8850	749390	JACK, telephone: JK-43; panel mtg; for 3 conductor plug 0.208″ dia; ¾″ dia x ⅞″ lg; (J2 contact arrangement; ⅜″-32 thd bushing for mtg). (AF Part No. 2Z5543)	Microphone connection	JAN JJ033

J-502	8850	749430	JACK, telephone: JK-34-A; panel mtg; for 2 conductor plug 0.250″ dia; x 1.287″ lg; (J1 contact arrangement: ⅜″-32 thd bushing for mtg). (AF Part No. 2Z5534)	Headset connection	Sylvania 56203-1
P-501	8850	605629	CONNECTOR, male contact: 24 round male contacts; 1¾″ sq x 1 11/32″ thk, less contacts: (cylindrical Al body; 4 mtg holes, 0.147″ dia on 1⅜″ sq mtg/c, bushing threaded 1½″-18). AN-3102-24-28p. (AF Part No. 2Z3044-3)	Power junction box connector	Sylvania 55918-1
R-501	3350	101000-2611	RESISTOR, fixed: composition; 270 ohms ±5%; ½ watt. (AF Part No. 3RC20BF271J)	Headset attenuator	JAN RC20AF271J
R-502	3350	131000-3551	RESISTOR, fixed: composition; 1000 ohms ±10%; 1 watt. (AF Part No. 3RC30BF102K)	Headset attenuator	JAN RC30AF102K
S-501†	3360	399855151	SWITCH, push: 9 section; 1 SPST, 8 DPST; bakelite body; 5¼″ lg x 1¾″ wd x 1 15/16″ h, overall; interlocking, 8 poles normally open, 1 pole normally closed; 4 mtg holes, tapped No. 6-32; horizontal mtg/c 4 31/32″ and 3 31/32, vertical mtg/c 0.866″; 34 solder lug terminals.	On-off and channel selector switch assembly	Sylvania 56759-1
S-501	3360	395323392	SWITCH, push: SPST; 9 sect; bakelite body; 5¼″ lg x 1¾″ wd x 1 15/16″ h overall; (interlocking, 8 poles normally open, 1 pole normally closed; 4 mtg holes, tapped No. 6-32; horizontal mtg/c 4 31/32″ and 3 31/32″; vertical mtg/c 0.866″; 28 solder lug term.). (AF Part No. 3Z9824-83.1)	On-off and channel selector switch assembly	Sylvania 56200-1 Oak 6350
S-501A			SWITCH, push: part of S-501; marked "A."	Channel "A" selector	Sylvania 56200-1
S-501B			SWITCH, push: part of S-501; marked "B."	Channel "B" selector	Sylvania 56200-1
S-501C			SWITCH, push: part of S-501; marked "C."	Channel "C" selector	Sylvania 56200-1
S-501D			SWITCH, push: part of S-501; marked "D."	Channel "D" selector	Sylvania 56200-1
S-501E			SWITCH, push: part of S-501; marked "E".	Channel "E" selector	Sylvania 56200-1
S-501F			SWITCH, push: part of S-501; marked "F."	Channel "F" selector	Sylvania 56200-1
S-501G			SWITCH, push: part of S-501; marked "G"	Channel "G" selector	Sylvania 56200-1
S-501H			SWITCH, push: part of S-501; marked "H."	Channel "H" selector	Sylvania 56200-1
S-501J			SWITCH, push: part of S-501; marked "J"; normally closed.	On-off	Sylvania 56200-1
S-502	3360	395323390	SWITCH, push: SPST; single section; bakelite body; 1 15/16″ lg x ¾″ dia overall; (2 amp, 32 v dc; non-locking momentary action, normally open; mts by bushing ⅜″-32 x ⅜″ lg; 2 solder lug term.). (AF Part No. 3Z9824-83)	Tone-osc switch	Sylvania 55319-1 Stackpole CT

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† Used on Control Box C-118A/ARC-3 only.

TABLE OF PARTS (Continued)

MODEL: RADIO SET AN/ARC-49 **MAJOR ASSEMBLY: CONTROL, RADIO SET C-1400/ARC-49**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
600-699 series	1600	011270110	CONTROL, RADIO SET, C-1400/ARC-49: 5¾″ lg x 2⅝″ wd x 4½″ h overall; mtd with 4 Dzus studs on 1½″ x 5 31/64″ mtg/c; (contains cable and receptacles assembly; "ON-OFF" switch; tone control; volume control; channel selector switch; crystal selector switch; and plastic lighting plate).	Controls Radio Set AN/ARC-49	Sylvania 82980-1
A-601	3320	084404550	PLATE, lighting: plastic, clear; black finish; 5 45/64″ lg x 2 37/64″ wd x 3/16″ thk overall; marked "COMM," "VHF," "VOL," "TONE," "CHANNEL," "ON-OFF"; (3 mtg holes 7/32″ dia on 1 13/16″ and 3 57/64″ mtg/c).	Function identification	Sylvania 82981-1
E-601	3320	083351716	KNOB, selector switch: Al alloy, caustic-dipped, black anodized; 13/16″ dia x ¾″ h overall; base 13/64″ dia x ¼″ h; finger grip 13/16″ lg x ½″ h x ⅜″ wd at center tapered to ¼″ wd at ends; center hole ¼″ dia x 9/16″ deep, csink 7/16″ dia x 5/32″ deep; 3 mtg holes tapped No. 2-56 equally spaced on ⅝″ dia B.C.; 2 set screw holes tapped No. 8-32.	Crystal selector switch knob	Sylvania 90621-1
E-602	3320	083351716	KNOB, selector switch: same as E-601.	Channel selector switch knob	Sylvania 90621-1
E-603	3320	292241703	KNOB, round: molded plastic; black; for ¼″ dia shaft; 2 No. 8-32 set screws; ⅞″ dia x ½″ h; nickel pl brass insert; shaft hole 13/32″ d; molded or engraved permanent white line from center to outside edge 1/25″ wd x 1/64″ d. (AF Dwg. No. 50B13038)	Volume control knob	Sylvania 77171-1
I-601	7700	550665	LIGHT, panel: 9/16″ dia x 1¼″ h overall; (includes lamp; lamp holder with black cap, light seal washer, and red light filter; mtg base with 15/32″-32 thd hex mtg nut and 1 solder type term.).	Panel lighting	Sylvania 77167-2
I-602	7700	550665	LIGHT, panel: same as I-601.	Panel lighting	Sylvania 77167-2
N-601	3320	080551820	DIAL, knob: plastic; black finish; 1¼″ dia x 1/16″ thk; center hole 7/16″ dia; 3 holes 3/32″ dia csink 82° x 3/16″ dia equally spaced on ⅝″ dia B.C.; marked "1,2,3,4,5,6,7,8,9,10,11,12" spaced 30° CCW on 29/32″ dia).	Switch position indicator	Sylvania 90620-2
N-602	3320	080551815	DIAL, knob: plastic; black finish; 1¼″ dia x 1/16″ thk; center hole 7/16″ dia; 3 holes 3/32″ dia csink 82° x 3/16″ dia equally spaced on ⅝″ dia B.C.; marked "D,C,B,A" spaced 30° on 29/64″ radius.	Switch position indicator	Sylvania 90620-1

P-601	8850	375750	CONNECTOR, male contact: 18 banana type contacts; $1\frac{13}{16}$″ dia x $\frac{45}{64}$″ h overall; (cylindrical Al body; molded black bakelite insert; 1⅝″-24 thd for mtg; $\frac{15}{32}$″ lg; supplied with mtg nut). (AF Part No. 2Z8799-109)	Power junction box connector and transmitter control	Sylvania 55916-1
P-602	8850	588880	CONNECTOR, male contact: 16 banana type contacts; $1\frac{13}{16}$″ dia x $\frac{45}{64}$″ h overall; (cylindrical Al body; molded black bakelite insert; 1⅝″-24 thd for mtg; $\frac{15}{32}$″ lg; supplied with mtg nut). (AF Part No. 2Z8800-41)	Receiver control connector	Sylvania 55494-1
R-601	3350	085000-1831	RESISTOR, fixed: composition; 47 ohms ±10%; 1 watt.	Minimum volume limiting	JAN RC20AE470K
R-602	3350	759000-2711	RESISTOR, variable: composition; 1000 ohms ±10%; ½ watt; 3 term.; body $\frac{29}{64}$″ lg x $\frac{31}{32}$″ dia; shaft ¼″ dia x ⅞″ lg; (linear taper; enclosed body; ⅜″-32 x ⅜″ lg).	Volume control	JAN -R-94 Type RV2ATSC102A
S-601	3360	398000111	SWITCH, toggle: bat handle; SPST; mtg plate 2⅛″ lg x ¾″ wd; 3 hole mtg; 2 self-locking insert nuts No. 6-32 thd; 2 term.; marked "ON," "OFF."	ON-OFF switch	AN-3022-2
S-602	3360	073012779	SWITCH, D/F Tone Control: push button; 10 amp max, 5 amp inductive at 30 v dc; black molded bakelite case; black plastic plunger; black anodized Al adapter; $1\frac{13}{32}$″ lg x $\frac{11}{16}$″ dia; momentary action; normally open; solder lug term.; mtg bushing ⅝-27 thd x $\frac{5}{16}$″ lg.	Tone modulates transmitter	Sylvania 82993-1
S-603	3360	073114033	SWITCH, channel selector: rotary; 2 wafer; 4 position with stops; silver alloy contacts and rotors; phenolic wafer; 2⅛″ lg x 1¼″ dia overall; solder lug term.; mtg bushing ⅜″ x 32 thd with stainless steel washer and hex nut; knob shaft ¼″ dia flatted ⅜″ lg x $\frac{1}{32}$″ d; locating lug $\frac{3}{16}$″ x ⅛″ wd.	Channel bank selector	Sylvania 82997-1
S-604	3360	073114156	SWITCH, crystal selector: rotary; 2 wafer; 12 position with stop; silver alloy contacts and rotors; phenolic wafer; 2⅛″ lg x 1¼″ dia overall; solder lug term.; mtg bushing ⅜″ x 32 thd with stainless steel washer and hex nut; knob shaft ¼″ dia flatted ⅜″ lg x $\frac{1}{32}$″ d; locating lug $\frac{3}{16}$″ lg x ⅛″ wd.	Crystal selector	Sylvania 82996-1

MODEL: RADIO SET AN/ARC-3 AND AN/ARC-36 **MAJOR ASSEMBLY: CONTROL UNIT C-197/ARC-3**

801-899 series			CONTROL UNIT, C-197/ARC-3: Al; $2\frac{7}{16}$″ h x $1\frac{15}{16}$″ wd x 2⅛″ lg; (two No. 6-32 nuts for mounting on $1\frac{13}{16}$″ mtg/c).	Controls headset volume	Sylvania 56480-1
E-801	3320	287323802	KNOB: round; black bakelite; for ¼″ dia shaft; 2 No. 6-32 set screws; 1⅛″ dia x $\frac{19}{32}$″ h overall; brass insert; shaft hole ½″ d; (straight knurl; marked "VHF AUDIO"). (AF Part No. 2Z3044-2)	Operates volume control	Sylvania 56479-1
R-801	3350	294459100	RESISTOR, variable: carbon; 1,000 ohms ±10%; 1 watt; 3 term.; body $1\frac{1}{16}$″ dia x $\frac{9}{16}$″ thk; shaft ¼″ dia x $5\frac{9}{64}$″ lg; (linear taper; enclosed body; bushing ⅜″-32 x ⅜″ lg). (AF Part No. 2Z7268.6)	Volume control	Sylvania 56469

TABLE OF PARTS (Continued)

MODEL: RADIO SET AN/ARC-3 AND AN/ARC-36 **MAJOR ASSEMBLY: CONTROL UNIT C-197/ARC-3**

Reference Symbol	USAF Stock Number		Name of Part and Description	Function	Mfg'r. and Part No. or Military Type No.
	Class Code	Serial Number			
R-802★	3350	098000-2991	RESISTOR, fixed: composition, 560 ohms ±10%; ½ watt; 0.468″ max lg x 0.249″ max dia; (bakelite insulation; 2 axial wire leads 1½″ lg). (AF Part No. 3RC20BF561K)	Volume limiting	JAN RC20AF561K

MODEL: RADIO SET AN/ARC-3 AND AN/ARC-36 **MAJOR ASSEMBLY: CONTROL PANEL C-404/A AND C-404A/A**

900-999 series			CONTROL PANEL, C-404/A/ARC-3: 5″ lg x $2\frac{19}{32}$″ wd x 3″ h approx overall; marked "VHF COMMAND," "D/F TONE," "OFF-ON," and "A-B-C-D-E-F-G-H"; (c/o control panel; channel selector switch; volume control, D/F tone control; "OFF-ON" toggle switch; and 2 wiring cable assemblies).	Controls Radio Set AN/ARC-3 or AN/ARC-36	
900-999 series	1600	211688471	CONTROL PANEL, C-404A/A/ARC-3: 5″ lg x $2\frac{19}{32}$″ wd x 3″ h approx overall; marked "VHF COMMAND," "D/F TONE," "VOLUME," "OFF-ON," and "A-B-C-D-E-F-G-H"; (c/o control panel; plastic lighting plate w/2 panel lights; channel selector switch; volume control, D/F tone control; "OFF-ON" toggle switch; and 2 wiring cable assemblies).	Controls Radio Set AN/ARC-3 or AN/ARC-36	Sylvania 77170-1
A-901†	1600	013120000	PLATE, lighting: plastic; black lacquer coating; 5″ lg x $2\frac{19}{32}$″ w x ¼″ thk overall; ¾″ triangular cut from each corner; 4 mtg holes, $\frac{11}{64}$″ dia on $3\frac{3}{16}$″ x $2\frac{3}{32}$″ centers; 3 holes, ¾″ dia, one engraved "ABCDEFGH," one engraved "VOLUME" with clockwise arrow, one engraved "D/F TONE"; 2 holes, ½″ dia; 1 hole $\frac{9}{16}$″ dia engraved "ON" at top left and right, and "OFF" at bottom left and right; engraved "VHF COMMAND" at top of panel. (AF Dwg. No. 50C12902)	Function identification	Sylvania 77184-1
E-901†	3320	292241703	KNOB, round: molded plastic; black; for ¼″ dia shaft; 2 No. 8-32 set screws; ⅞″ dia x ½″ h; nickel pl brass insert; shaft hole $\frac{13}{32}$″ d; molded or engraved permanent white line from center to outside edge 1/25″ wd x $\frac{1}{64}$″ d. (AF Dwg. No. 50B13038)	Volume control knob	Sylvania 77171-1
E-901††	3320	292241595	KNOB, round: black plastic; for ¼″ dia shaft; 2 No. 8-32 set screws; ⅞″ dia x $\frac{19}{32}$″ h; brass insert; shaft hole ½″ d; marked "VOLUME"; AF Dwg 46B42258. (AF Part No. 2Z5786.12)	Volume control knob	Bendix C6018703

E-902	3320	292241388	KNOB, bar: black plastic; for ¼″ dia shaft; 2 No. 8-32 set screws; 1¼″ lg x 11/16″ thk; brass insert; shaft hole ⅜″ d; arrow marked; (AF Dwg. No. 47A40527). (AF Part No. 2Z5822-216)	Channel selector switch knob	Sylvania 77173-1 Telephonic 35025
I-901†	7700	550665	LIGHT, panel: 9/16″ dia x 1¼″ h overall; (includes lamp; lamp holder with black cap, light seal washer, and red light filter; mtg base with 15/32″-32 thd hex mtg nut and 1 solder type term.).	Panel lighting	Sylvania 77167-2
I-902†	7700	550665	LIGHT, panel: same as I-901.	Panel lighting	Sylvania 77167-2
R-901	3350	759000-2711	RESISTOR, variable: composition; 1000 ohms ±10%; ½ watt; 3 term.; body 29/64″ lg x 31/32″ dia; shaft ¼″ dia x ⅞″ lg; (linear taper; enclosed body; ⅜″-32 x ⅜″ lg).	Volume control	JAN -R-94 Type RV2ATSC102A
R-902	3350	085000-1831	RESISTOR, fixed: composition; 47 ohms ±10%; ½ watt.	Minimum volume limiting	JAN RC20AE470K
S-901	3360	395499407	SWITCH, rotary: 1 pole 8 position; silver alloy contact; plastic wafer; 1⅞″ lg x 1½″ wd x 1⅛″ d; shorting type contact; solder lug term; mtg bushing ⅜″-32 thd; AF Dwg. 47B-40529. (AF Part No. 3Z9825-62.316)	Channel selector switch	Sylvania 77182-1 Oak 34944-H1
S-902	3360	398000111	SWITCH, toggle: bat handle; SPST; mtg plate 2⅛″ lg x ¾″ wd; 3 hole mtg; 2 self-locking insert nuts No. 6-32 thd; 2 term.; marked "ON," "OFF."	ON-OFF switch	AN-3022-2
S-903	3360	395370400	SWITCH, D/F Tone Control: push button; black molded bakelite case; 1 21/32″ h x 25/32″ dia overall; momentary action; normally open; solder lug term.; mtg bushing 15/32″-32 thd x 11/32″ lg. (AF Part No. 3Z9824-283.1)	D/F tone switch	Sylvania 77161-1 Ucinite 138187

MODEL: RADIO SET AN/ARC-36 **MAJOR ASSEMBLY: MODIFICATION KIT MX-1131A/ARC**

1000-1099 series	1600	012074500	MODIFICATION KIT MX-1131A/ARC: c/o Crystal Socket Adapter UG-613A/U; Crystal Socket Adapter UG-614A/U; Cover Assembly CW-220A/U; Cover Assembly CW-221A/U; and Mounting Assembly MT-798A/U.	Converts Radio Set AN/ARC-3 to Radio Set AN/ARC-36	Sylvania 79268-1
	1600	286057110	CRYSTAL SOCKET ADAPTER UG-613A/U: 6¼″ lg x 4⅜″ wd x 4⅜″ h overall; (c/o P-1002; X-1004; X-1005; X-1006; X-1007; handle; and cable assembly).	Converts AN/ARC-3 Transmitter to AN/ARC-36 Transmitter	Sylvania 78690-1
	1600	010011950	CRYSTAL SOCKET ADAPTER UG-614A/U: 6½″ lg x 3½″ wd x 3⅛″ h approx overall; (c/o P-1000; K-1000; K-1001; X-1000; X-1001; X-1002; X-1003; and cable assembly).	Converts AN/ARC-3 Receiver to AN/ARC-36 Receiver	Sylvania 78840-1
	1600	011574860	COVER ASSEMBLY CW-220A/U: Al, caustic dipped; 6¾″ lg x 5⅝″ wd x 2½″ h overall; mtd with 3 Dzus fasteners; marked "CW-220A/U"; contains 2 crystal retainer assemblies.	Covers transmitter crystal compartment	Sylvania 78797-1

★ This Resistor has a value of 180 ohms in some equipment.
† Used only on Control Panel C-404A/A.
†† Used only on Control Panel C-404/A.

TABLE OF PARTS (Continued)

MODEL: RADIO SET AN/ARC-36 **MAJOR ASSEMBLY: MODIFICATION KIT MX-1131A/ARC**

Reference Symbol	*USAF Stock Number*		*Name of Part and Description*	*Function*	*Mfg'r. and Part No. or Military Type No.*
	Class Code	*Serial Number*			
	1600	011574850	COVER ASSEMBLY CW-221A/U: Al, caustic dipped cover and cover cap; $7\frac{5}{16}$″ lg x $6\frac{7}{16}$″ wd x 4″ h approx overall; marked "CW-221A/U"; mtd with 2 Dzus fasteners and 1 latch; contains 2 crystal retainer assemblies.	Covers receiver crystal compartment	Sylvania 78811-1
	1600	012829010	MOUNTING ASSEMBLY MT-798A/U: c/o S-1001 mtd on black anodized Al mounting 2″ lg x 1″ wd x $\frac{1}{16}$″ thk; marked "VHF," "RADIO," "REGULAR CHANNELS," "AUXILIARY CHANNELS" on front, and "MT-798A/U" on back.	Regular or auxiliary channel selector	Sylvania 79208-1
K-1000	3380	511125-9221	RELAY: Auxiliary and Regular Channel Selector; solenoid; 4PDT; $1\frac{13}{64}$″ lg x $\frac{11}{16}$″ wd x $1\frac{11}{64}$″ h approx overall; (16 ga palladium contacts; contact rating 28 v dc 100 ma; single wound coil, 15 v dc, 54 ma, 280 ohms; 4 holes tapped No. 3-48 in base on $\frac{3}{8}$″ mtg/c; p/o UG-614A/U).	Regular or auxiliary channel switching	Sylvania 78660-1
K-1001	3380	511125-9221	RELAY: same as K-1000.	Regular or auxiliary channel switching	Sylvania 78660-1
K-1002	3380	511125-9221	RELAY: Auxiliary and Regular Channel Selector; solenoid; 4 PDT; $1\frac{13}{64}$″ lg x $\frac{11}{16}$″ wd x $1\frac{11}{64}$″ h approx overall; (16 ga palladium contacts; contact rating 28 v dc 100 ma; single wound coil, 15 v dc, 54 ma, 280 ohms; 4 holes tapped No. 3-48 in base on $\frac{3}{8}$″ mtg/c; p/o UG-613A/U).	Regular or auxiliary channel switching	Sylvania 78660-1
K-1003	3380	511125-9221	RELAY: same as K-1002.	Regular or auxiliary channel switching	Sylvania 78660-1
P-1000	8850	589990	CONTACT ASSEMBLY: $6\frac{11}{32}$″ lg x $1\frac{3}{8}$″ wd x $1\frac{1}{4}$″ h overall; (c/o 16 pin contact board assembly with 10 solder term.); p/o UG-614A/U.	Crystal socket adapter connector	Sylvania 79360-1
P-1002	1600	010015000	CONTACT ASSEMBLY: $6\frac{1}{8}$″ lg x $1\frac{3}{8}$″ wd x $2\frac{3}{8}$″ h overall; (c/o 16 pin contact board assembly; 10 solder terminals; K-1002; K-1003); p/o UG-613A/U.	Crystal socket adapter connector	Sylvania 78814-1
S-1001	3360	074032090	SWITCH, Toggle: bat handle; dpdt; $2\frac{9}{32}$″ lg x $1\frac{5}{16}$″ h overall; mtg bushing $\frac{15}{32}$″-32NS-2 thd; (furnished with 2 nuts (1 on switch), 1 internal tooth lockwasher and 1 locking ring); shall meet all requirements of AN-3027-3; p/o MT-798A/U.	Regular or auxiliary channel switch	Sylvania 79164-1
X-1000	8850	871756	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$″ lg x $1\frac{21}{32}$″ wd x $\frac{43}{64}$″ h overall; (4 mtg holes $\frac{9}{64}$″ dia on $1\frac{9}{16}$″ x $1\frac{3}{8}$″ mtg/c; marked "A - B - C - D"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-1

X-1001	8850	871758	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$" lg x $1\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on $1\frac{9}{16}$" x $1\frac{3}{8}$" mtg/c; marked "E - F - G - H"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-3
X-1002	8850	871759	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$" lg x $1\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on $1\frac{9}{16}$" x $1\frac{3}{8}$" mtg/c; marked "A_1 - B_1 - C_1 - D_1"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-4
X-1003	8850	871757	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$" lg x $1\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on $1\frac{9}{16}$" x $1\frac{3}{8}$" mtg/c; marked "E_1 - F_1 - G_1 - H_1"); p/o UG-614A/U.	Mounts crystals	Sylvania 79010-2
X-1004	8850	871754	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$" lg x $1\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on $1\frac{9}{16}$" x $1\frac{3}{8}$" mtg/c; marked "A - B - C - D"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-3
X-1005	8850	871752	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$" lg x $1\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on $1\frac{9}{16}$" x $1\frac{3}{8}$" mtg/c; marked "E - F - G - H"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-1
X-1006	8850	871753	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$" lg x $1\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on $1\frac{9}{16}$" x $1\frac{3}{8}$" mtg/c; marked "A_1 - B_1 - C_1 - D_1"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-2
X-1007	8850	871755	SOCKET ASSEMBLY: Crystal; 12 prongs; molded black bakelite; $3\frac{11}{64}$" lg x $1\frac{21}{32}$" wd x $\frac{43}{64}$" h overall; (4 mtg holes $\frac{9}{64}$" dia on $1\frac{9}{16}$" x $1\frac{3}{8}$" mtg/c; marked "E_1 - F_1 - G_1 - H_1"); p/o UG-613A/U.	Mounts crystals	Sylvania 78857-4
Y-1001* to Y-1016*			CRYSTAL UNIT, quartz: Sig C type CR-1A/AR, DC-11-A, DC-16-A or DC-26-A, 5555 to 8666 kc.	Channel crystals	
Y-1017* to Y-1032*			CRYSTAL UNIT, quartz: Sig C type CR-1A/AR, DC-11-A, DC-16-A, or DC-26-A; 8,000 to 8,727 kc.	Channel crystals	

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* Not available as a spare part, listed for reference only.

SECTION VIII
DRAWINGS

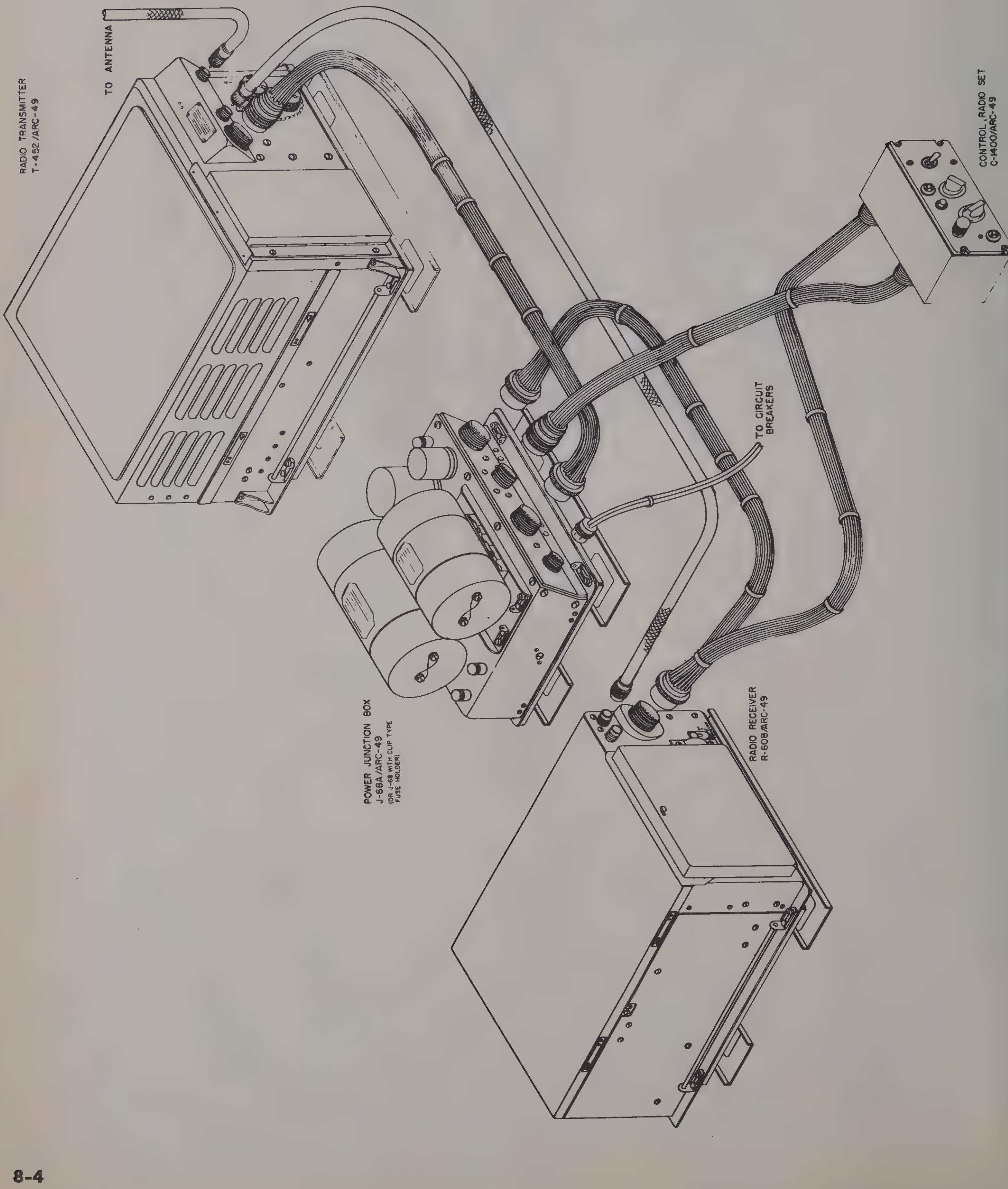

RADIO TRANSMITTER
T-452/ARC-49
TO ANTENNA
CONTROL, RADIO SET
C-1400/ARC-49
TO CIRCUIT
BREAKERS
POWER JUNCTION BOX
J-68A/ARC-49
(OR J-68 WITH CLIP TYPE
FUSE HOLDER)
RADIO RECEIVER
R-608/ARC-49

Figure 8-3. Radio Set AN/ARC-49—Cording Diagram

MTG. BASE	A	B	C	D
MT-238	8 11/16	6 11/16	6 9/16	2 3/8
MT-238A	8 11/16	6 11/16	6 9/16	2 3/8
MT-238B	9 1/16	7 1/16	6 15/16	2 3/4
MT-238C	9 1/16	7 1/16	6 15/16	2 3/4

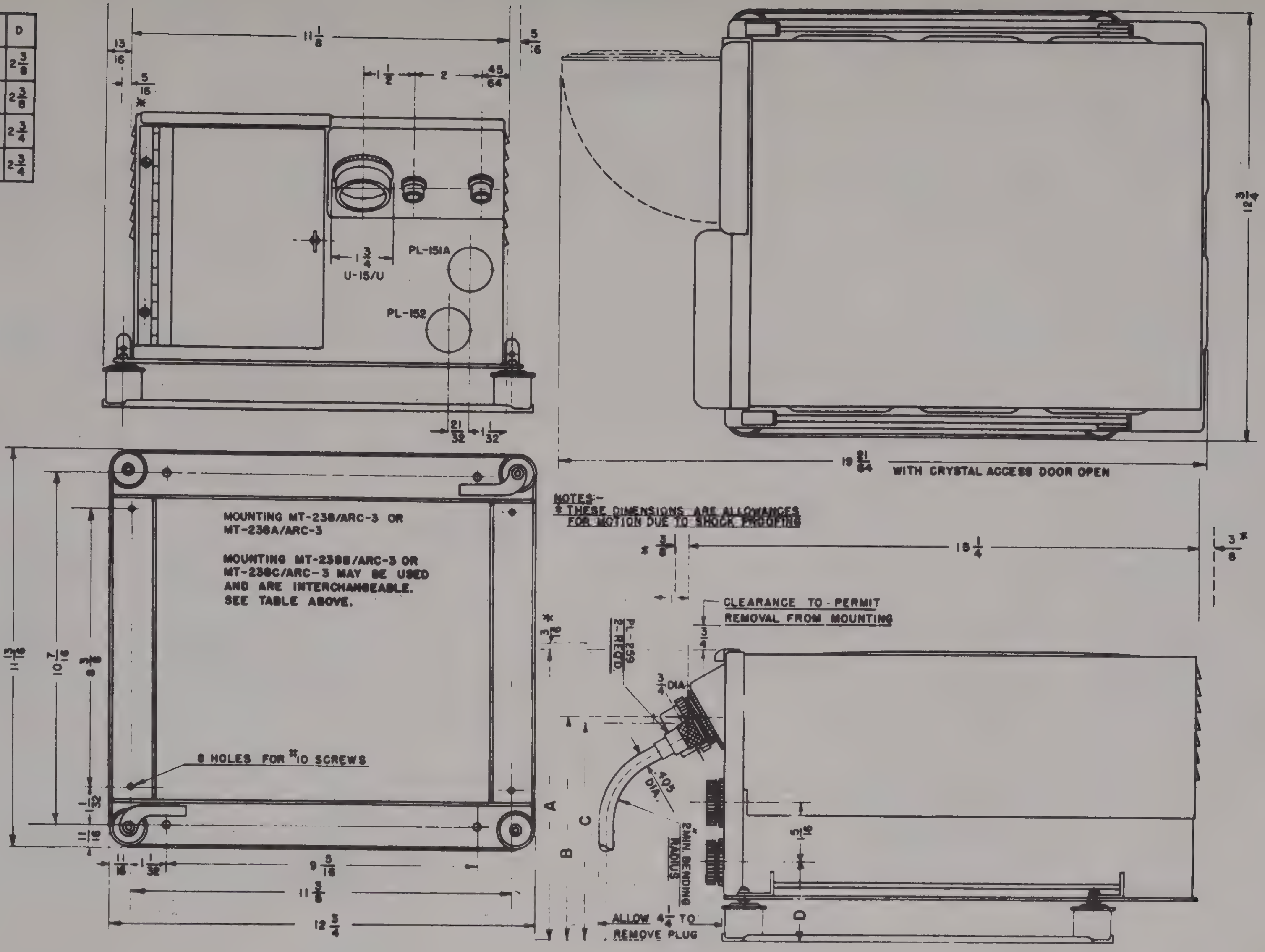
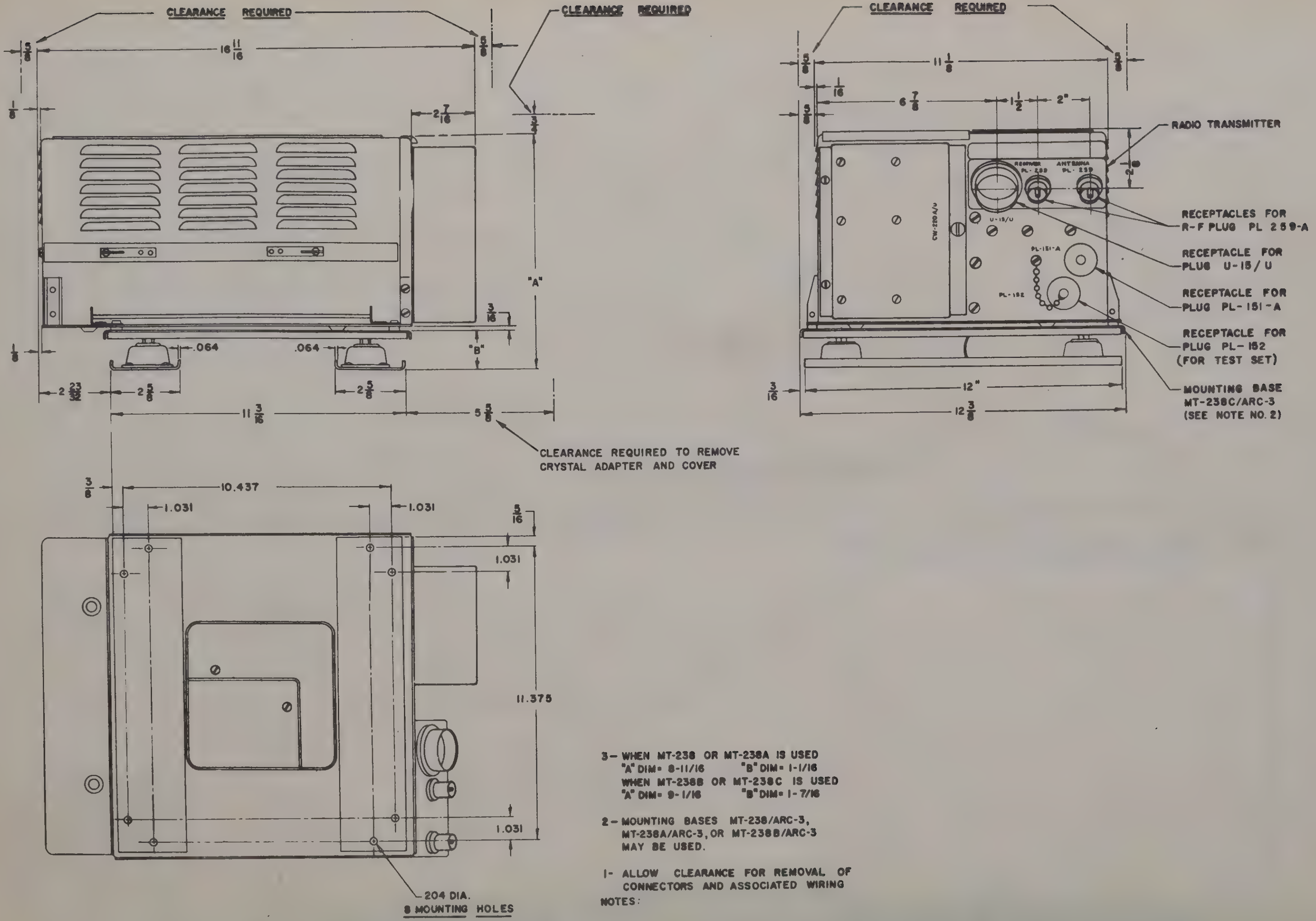

11 1/8
13/16
5/16
5/16 *
1 1/2
2
45/64
1 3/4
U-15/U
PL-151A
PL-152
21/32
1 1/32
12 3/4
19 21/64 WITH CRYSTAL ACCESS DOOR OPEN
NOTES:-
* THESE DIMENSIONS ARE ALLOWANCES FOR MOTION DUE TO SHOCK PROOFING
3/8 *
15 1/4
3/8 *
CLEARANCE TO PERMIT REMOVAL FROM MOUNTING
MOUNTING MT-238/ARC-3 OR MT-238A/ARC-3
MOUNTING MT-238B/ARC-3 OR MT-238C/ARC-3 MAY BE USED AND ARE INTERCHANGEABLE. SEE TABLE ABOVE.
11 13/16
10 7/16
8 3/8
3/16 *
PL-259 2-REQ'D.
3/4
3/4 DIA.
8 HOLES FOR #10 SCREWS
1 1/32
11/16
.405 DIA.
2" MIN. BENDING RADIUS
A
C
B
5/16
D
11/16
1 1/32
9 5/16
11 3/8
12 3/4
ALLOW 4 1/4 TO REMOVE PLUG

Figure 8-4. Radio Transmitter T-67/ARC-3, T-67A/ARC-3 or T-67B/ARC-3—Outline Drawing and Mounting Dimensions


CLEARANCE REQUIRED
16 11/16
5/8
1/8
2 7/16
3/4
"A"
3/16
"B"
.064
2 23/32
2 5/8
11 3/16
5 5/8
CLEARANCE REQUIRED TO REMOVE CRYSTAL ADAPTER AND COVER
11 1/8
1/16
6 7/8
1 1/2
2"
RADIO TRANSMITTER
RECEIVER PL-259
ANTENNA PL-259
U-15/U
PL-151-A
PL-152
CW-220A/U
RECEPTACLES FOR R-F PLUG PL 259-A
RECEPTACLE FOR PLUG U-15/U
RECEPTACLE FOR PLUG PL-151-A
RECEPTACLE FOR PLUG PL-152 (FOR TEST SET)
MOUNTING BASE MT-238C/ARC-3 (SEE NOTE NO. 2)
12"
12 3/8
3/8
10.437
1.031
5/16
11.375
.204 DIA. 8 MOUNTING HOLES

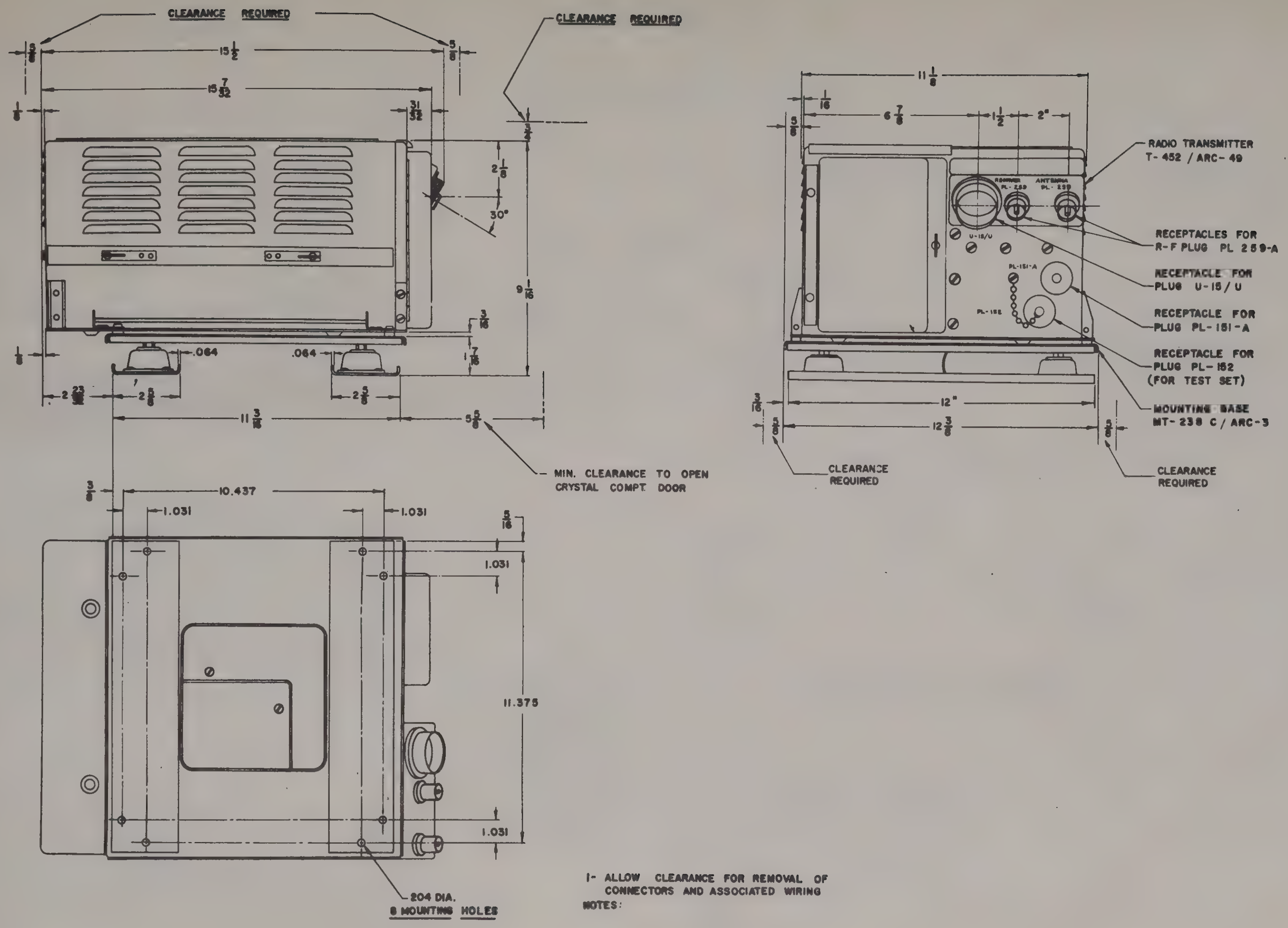
3- WHEN MT-238 OR MT-238A IS USED
"A" DIM= 8-11/16 "B" DIM= 1-1/16
WHEN MT-238B OR MT-238C IS USED
"A" DIM= 9-1/16 "B" DIM= 1-7/16

2- MOUNTING BASES MT-238/ARC-3, MT-238A/ARC-3, OR MT-238B/ARC-3 MAY BE USED.

1- ALLOW CLEARANCE FOR REMOVAL OF CONNECTORS AND ASSOCIATED WIRING

NOTES:

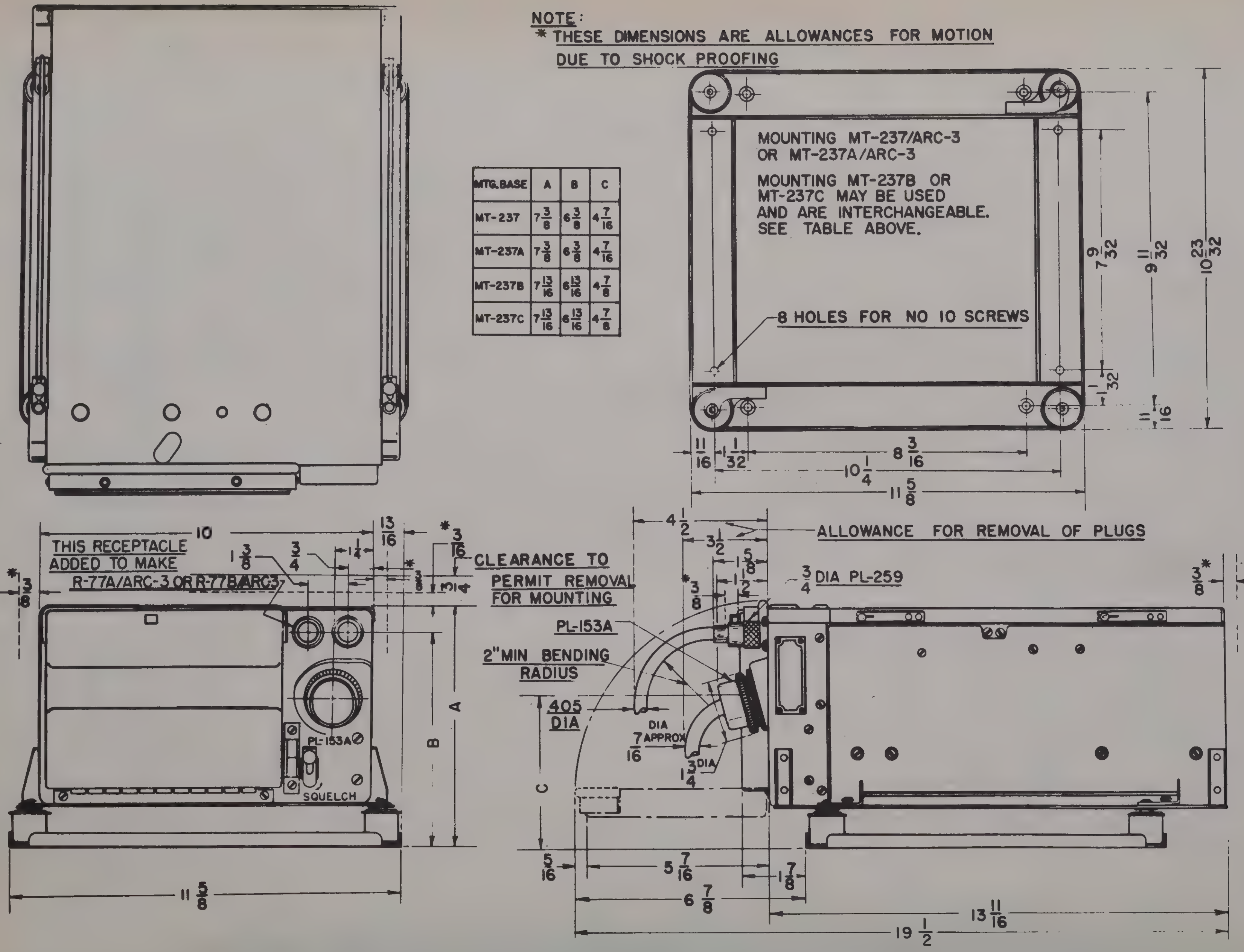
Figure 8-5. Radio Transmitter T-312/ARC-36, T-312A/ARC-36 or T-312B/ARC-36—Outline Drawing and Mounting Dimensions


CLEARANCE REQUIRED
CLEARANCE REQUIRED
5/8
15 1/2
5/8
15 7/32
31/32
1/8
3/4
2 1/8
30°
9 1/16
3/16
1 7/16
.064
.064
1/8
2 23/32
2 5/8
2 5/8
11 3/16
5 5/8
MIN. CLEARANCE TO OPEN CRYSTAL COMPT. DOOR
3/8
10.437
1.031
1.031
5/16
1.031
11.375
1.031
.204 DIA. 8 MOUNTING HOLES
11 1/8
1/16
5/8
6 7/8
1 1/2
2"
RADIO TRANSMITTER T-452 / ARC-49
RECEIVER PL-259
ANTENNA PL-259
U-15/U
PL-151-A
PL-152
RECEPTACLES FOR R-F PLUG PL 259-A
RECEPTACLE FOR PLUG U-15/U
RECEPTACLE FOR PLUG PL-151-A
RECEPTACLE FOR PLUG PL-152 (FOR TEST SET)
MOUNTING BASE MT-238 C / ARC-3
3/16
12"
5/8
12 3/8
5/8
CLEARANCE REQUIRED
CLEARANCE REQUIRED

NOTES:

1- ALLOW CLEARANCE FOR REMOVAL OF CONNECTORS AND ASSOCIATED WIRING

Figure 8-6. Radio Transmitter T-452/ARC-49—Outline Drawing and Mounting Dimensions


NOTE:
* THESE DIMENSIONS ARE ALLOWANCES FOR MOTION DUE TO SHOCK PROOFING
MOUNTING MT-237/ARC-3 OR MT-237A/ARC-3
MOUNTING MT-237B OR MT-237C MAY BE USED AND ARE INTERCHANGEABLE. SEE TABLE ABOVE.
8 HOLES FOR NO 10 SCREWS
11/16
1 1/32
8 3/16
10 1/4
11 5/8
7 9/32
9 11/32
10 23/32
1/32
11/16
THIS RECEPTACLE ADDED TO MAKE R-77A/ARC-3 OR R-77B/ARC-3
10
1 3/8
3/4
1 1/4
13/16
*3/16
*3/8
3/4
*3/8
CLEARANCE TO PERMIT REMOVAL FOR MOUNTING
PL-153A
2" MIN BENDING RADIUS
.405 DIA
SQUELCH
A
B
C
11 5/8
4 1/2
3 1/2
1 5/8
1 1/2
*3/8
ALLOWANCE FOR REMOVAL OF PLUGS
3/4 DIA PL-259
*3/8
DIA 7/16 APPROX
1 3/4 DIA
5/16
5 7/16
1 7/8
6 7/8
13 11/16
19 1/2

MTG. BASE	A	B	C
MT-237	7 3/8	6 3/8	4 7/16
MT-237A	7 3/8	6 3/8	4 7/16
MT-237B	7 13/16	6 13/16	4 7/8
MT-237C	7 13/16	6 13/16	4 7/8

Figure 8-7. Radio Receiver R-77/ARC-3, R-77A/ARC-3 or R-77B/ARC-3—Outline Drawing and Mounting Dimensions

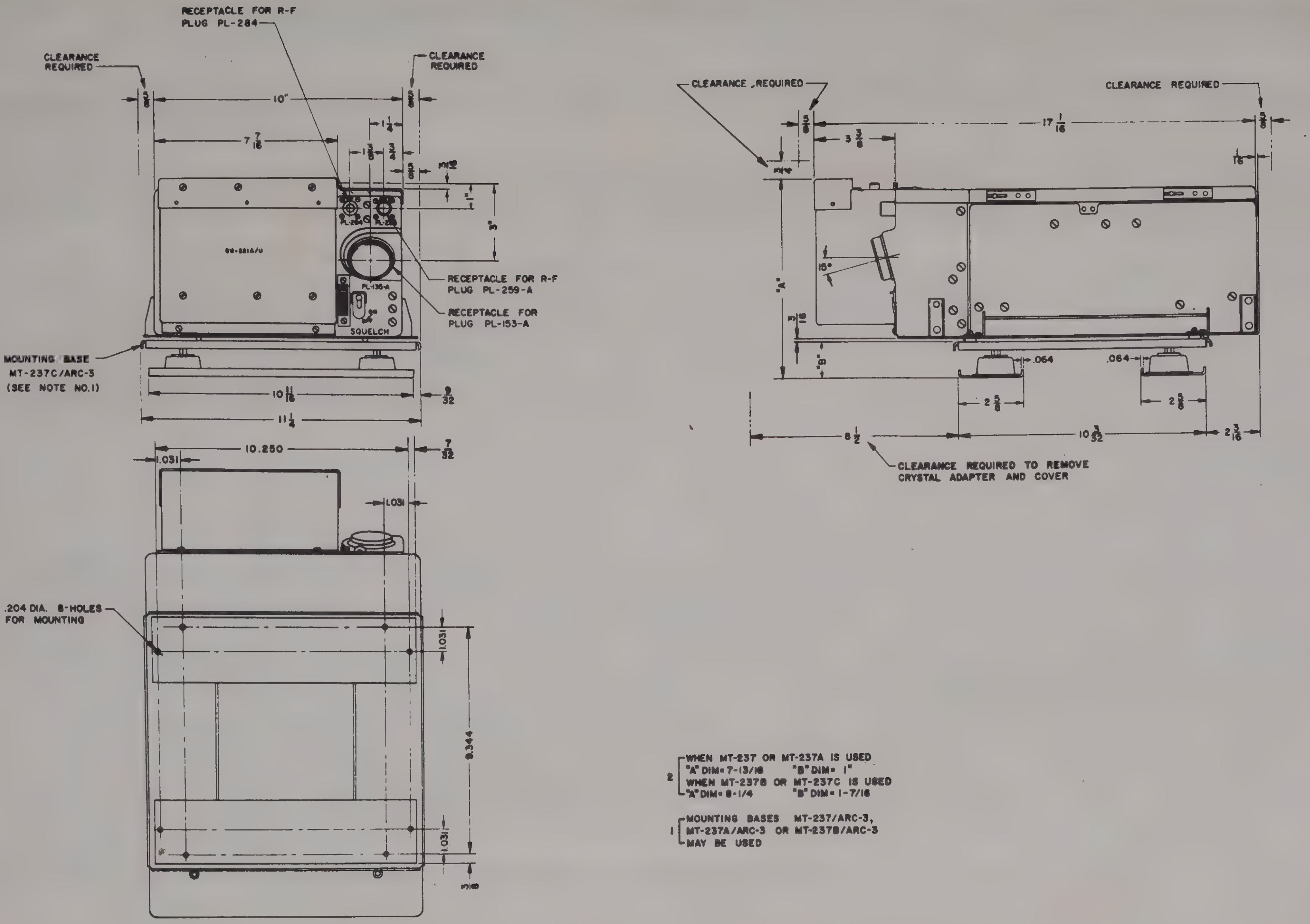

RECEPTACLE FOR R-F PLUG PL-284
CLEARANCE REQUIRED
CLEARANCE REQUIRED
10"
7 7/16
1 1/4
1 3/8
3/4
5/8
5/8
5/8
1"
3"
SW-281A/U
PL-284
PL-259
PL-136-A
SQUELCH
RECEPTACLE FOR R-F PLUG PL-259-A
RECEPTACLE FOR PLUG PL-153-A
MOUNTING BASE MT-237C/ARC-3 (SEE NOTE NO.1)
10 11/16
11 1/4
9/32
10.250
7/32
1.031
1.031
.204 DIA. 8-HOLES FOR MOUNTING
1.031
8.344
1.031
5/8
CLEARANCE REQUIRED
CLEARANCE REQUIRED
5/8
17 1/16
5/8
3 3/8
1/16
1/4
15°
"A"
3/16
"B"
.064
.064
2 5/8
2 5/8
8 1/2
10 3/32
2 3/16
CLEARANCE REQUIRED TO REMOVE CRYSTAL ADAPTER AND COVER
2 WHEN MT-237 OR MT-237A IS USED "A" DIM= 7-13/16 "B" DIM= 1" WHEN MT-237B OR MT-237C IS USED "A" DIM= 8-1/4 "B" DIM= 1-7/16
1 MOUNTING BASES MT-237/ARC-3, MT-237A/ARC-3 OR MT-237B/ARC-3 MAY BE USED

Figure 8-8. Radio Receiver R-428/ARC-36, R-428A/ARC-36 or R-428B/ARC-36—Outline Drawing and Mounting Dimensions

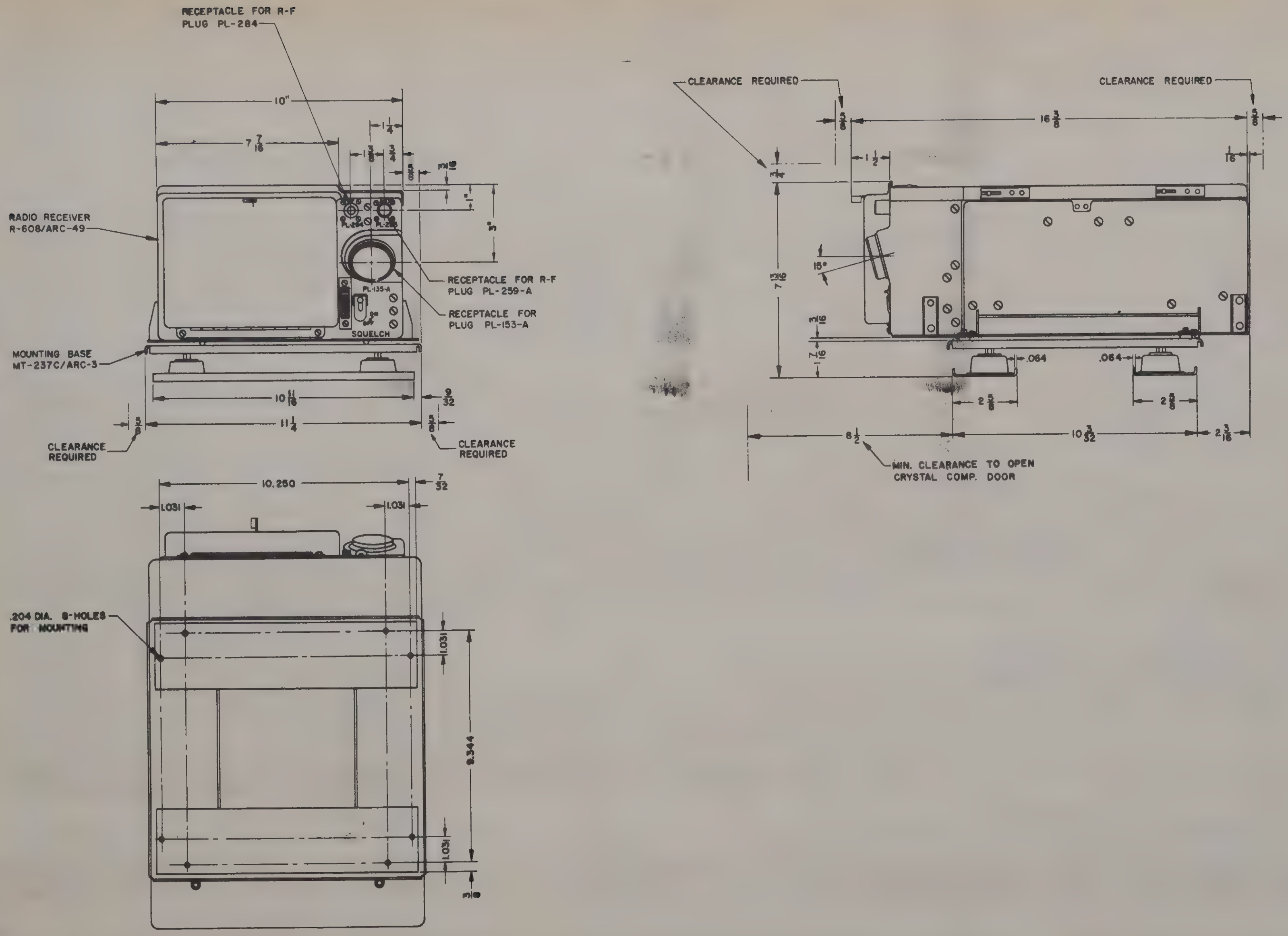
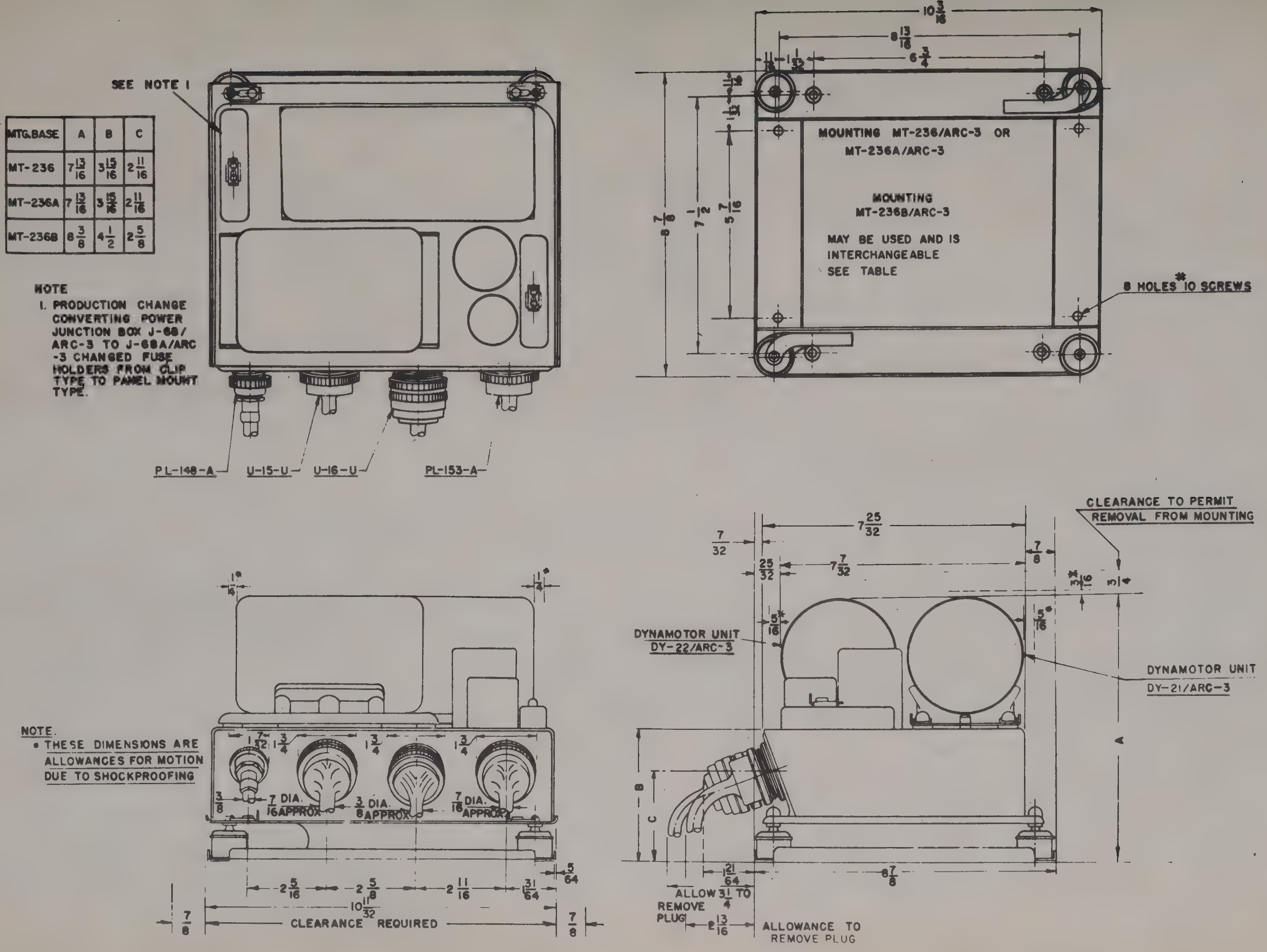

RECEPTACLE FOR R-F PLUG PL-284
RADIO RECEIVER R-608/ARC-49
RECEPTACLE FOR R-F PLUG PL-259-A
RECEPTACLE FOR PLUG PL-153-A
PL-135-A
SQUELCH
MOUNTING BASE MT-237C/ARC-3
CLEARANCE REQUIRED
CLEARANCE REQUIRED
10"
7 7/16
1 1/4
1 3/8
3/4
3"
10 11/16
11 1/4
9/32
5/8
5/8
10.250
7/32
1.031
1.031
1.031
1.031
9.344
3/8
.204 DIA. 8-HOLES FOR MOUNTING
CLEARANCE REQUIRED
CLEARANCE REQUIRED
16 3/8
5/8
5/8
1 1/2
15°
7 13/16
.064
.064
2 5/8
2 5/8
8 1/2
10 3/32
2 3/16
MIN. CLEARANCE TO OPEN CRYSTAL COMP. DOOR

Figure 8-9. Radio Receiver R-608/ARC-49—Outline Drawing and Mounting Dimensions


SEE NOTE I
PL-148-A
U-15-U
U-16-U
PL-153-A
MOUNTING MT-236/ARC-3 OR MT-236A/ARC-3
MOUNTING MT-236B/ARC-3
MAY BE USED AND IS INTERCHANGEABLE
SEE TABLE
8 HOLES* 10 SCREWS
10 3/16
8 13/16
6 3/4
1 1/32
8 7/8
7 1/2
5 7/16
CLEARANCE TO PERMIT REMOVAL FROM MOUNTING
7 25/32
7 7/32
7/32
25/32
7/8
5/16*
DYNAMOTOR UNIT DY-22/ARC-3
DYNAMOTOR UNIT DY-21/ARC-3
A
B
C
8 7/8
1 21/64
ALLOW 3 1/4 TO REMOVE PLUG
2 13/16
ALLOWANCE TO REMOVE PLUG
1/4*
1 7/32
1 3/4
3/8
7/16 DIA. APPROX
3/8 DIA. APPROX
2 5/16
2 5/8
2 11/16
31/64
5/64
10 11/32
CLEARANCE REQUIRED
7/8

MTG.BASE	A	B	C
MT-236	7 13/16	3 15/16	2 11/16
MT-236A	7 13/16	3 15/16	2 11/16
MT-236B	8 3/8	4 1/2	2 5/8

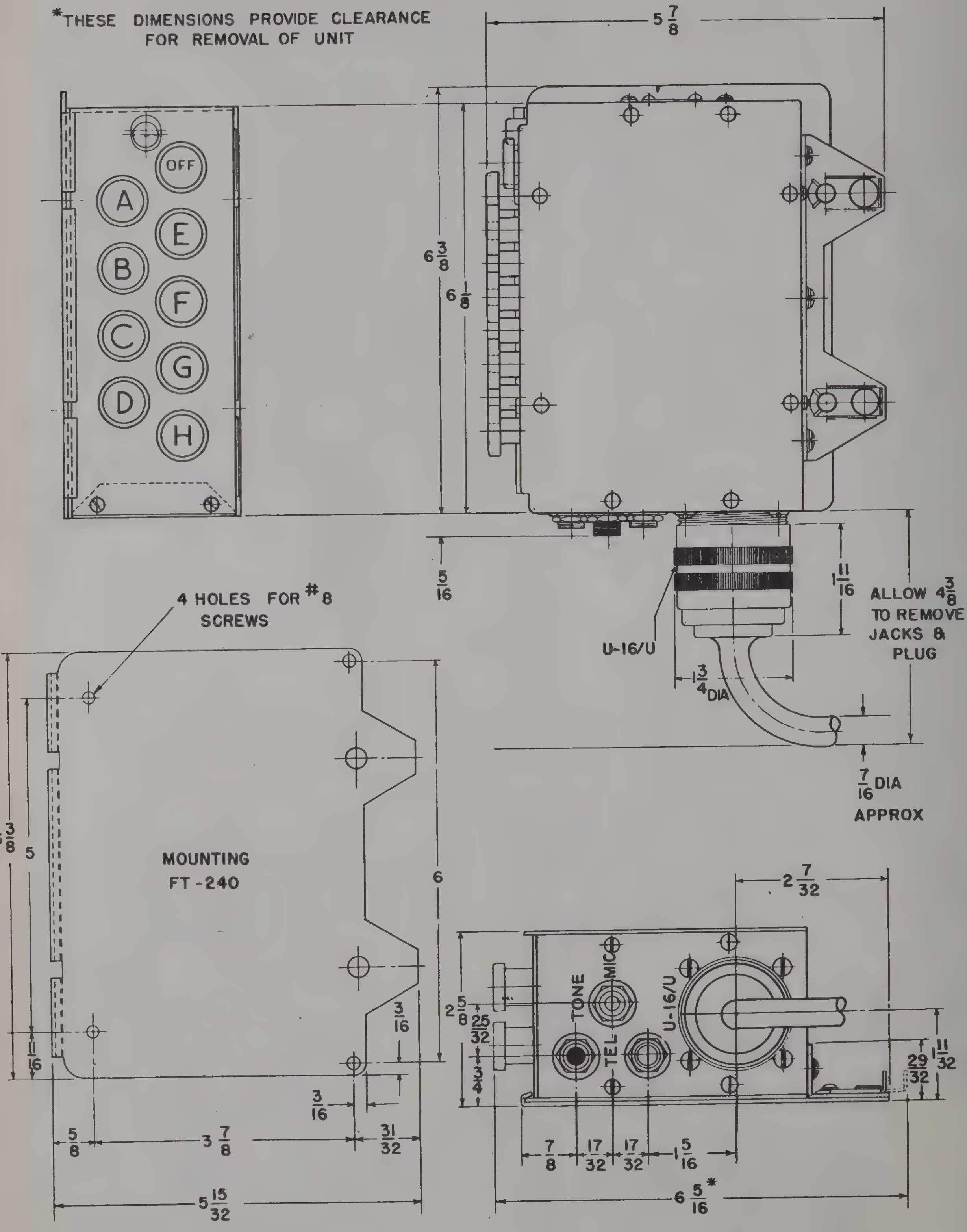
NOTE

1. PRODUCTION CHANGE CONVERTING POWER JUNCTION BOX J-68/ARC-3 TO J-68A/ARC-3 CHANGED FUSE HOLDERS FROM CLIP TYPE TO PANEL MOUNT TYPE.

NOTE.

* THESE DIMENSIONS ARE ALLOWANCES FOR MOTION DUE TO SHOCKPROOFING

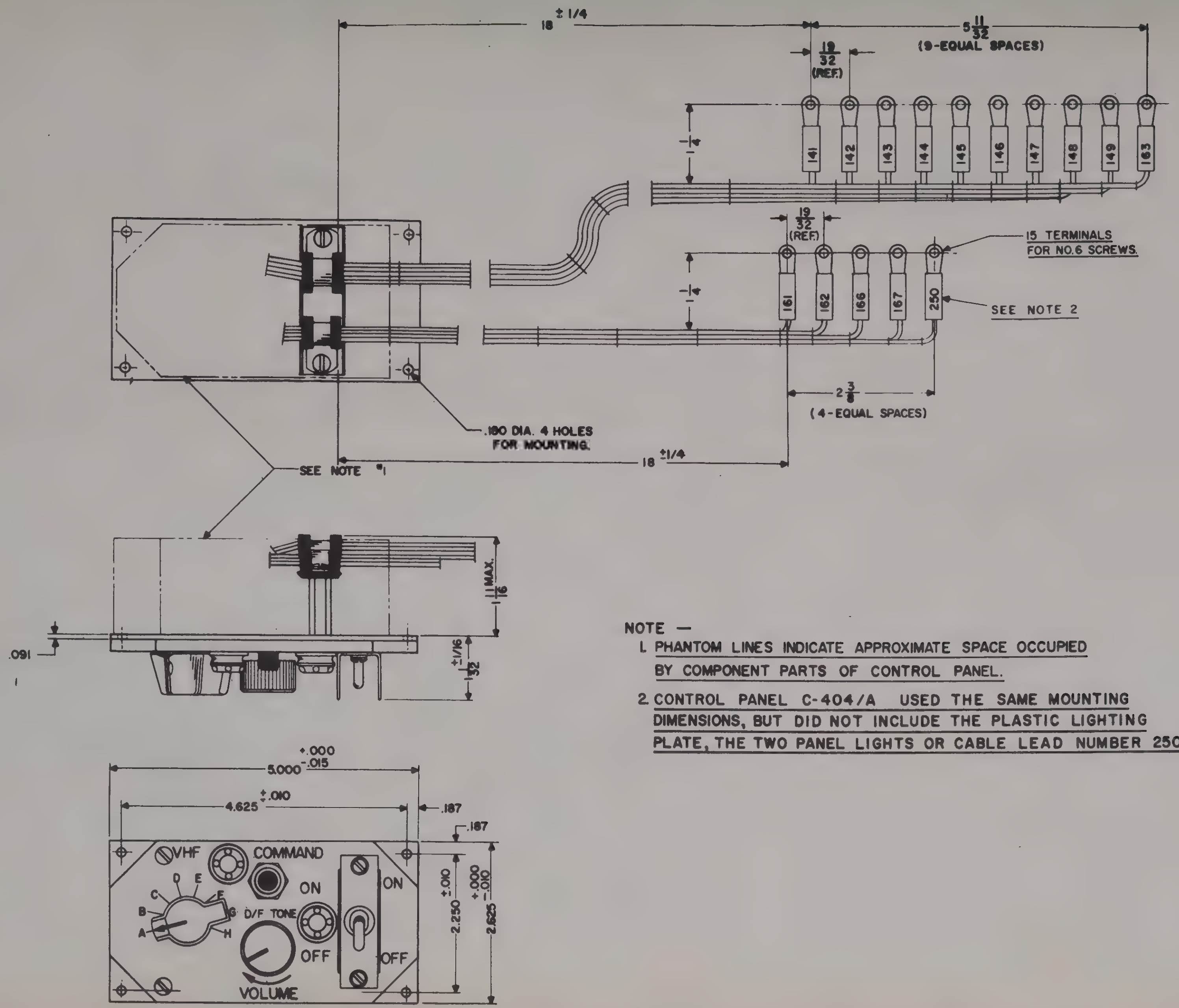
Figure 8-10. Power Junction Box J-68/ARC-3 or J-68A/ARC-3—Outline Drawing and Mounting Dimensions



*THESE DIMENSIONS PROVIDE CLEARANCE FOR REMOVAL OF UNIT

OFF
A
B
C
D
E
F
G
H
5 7/8
6 3/8
6 1/8
5/16
1 11/16
ALLOW 4 3/8 TO REMOVE JACKS & PLUG
U-16/U
1 3/4 DIA
7/16 DIA APPROX
4 HOLES FOR # 8 SCREWS
MOUNTING FT-240
6 3/8
5
6
11/16
3/16
3/16
5/8
3 7/8
31/32
5 15/32
2 7/32
TONE
MIC
TEL
U-16/U
2 5/8
25/32
3/4
1 11/32
29/32
7/8
17/32
17/32
1 5/16
6 5/16*

Figure 8-11. Control Box C-118/ARC-3 or C-118A/ARC-3—Outline Drawing and Mounting Dimensions


18 ± 1/4
5 11/32
(9-EQUAL SPACES)
19/32
(REF.)
1 1/4
141
142
143
144
145
146
147
148
149
163
19/32
(REF.)
15 TERMINALS
FOR NO.6 SCREWS.
1 1/4
161
162
166
167
250
SEE NOTE 2
2 3/8
(4-EQUAL SPACES)
.180 DIA. 4 HOLES
FOR MOUNTING.
18 ±1/4
SEE NOTE #1
1 11/16 MAX.
.091
1 1/32 ±1/16
5.000 +.000 -.015
4.625 ±.010
.187
.187
VHF
COMMAND
ON
ON
D/F TONE
OFF
OFF
VOLUME
A
B
C
D
E
F
G
H
2.250 ±.010
2.625 +.000 -.010

NOTE —

1. PHANTOM LINES INDICATE APPROXIMATE SPACE OCCUPIED BY COMPONENT PARTS OF CONTROL PANEL.
2. CONTROL PANEL C-404/A USED THE SAME MOUNTING DIMENSIONS, BUT DID NOT INCLUDE THE PLASTIC LIGHTING PLATE, THE TWO PANEL LIGHTS OR CABLE LEAD NUMBER 250.

Figure 8-12. Control Panel C-404/A or C-404A/A—Outline Drawing and Mounting Dimensions

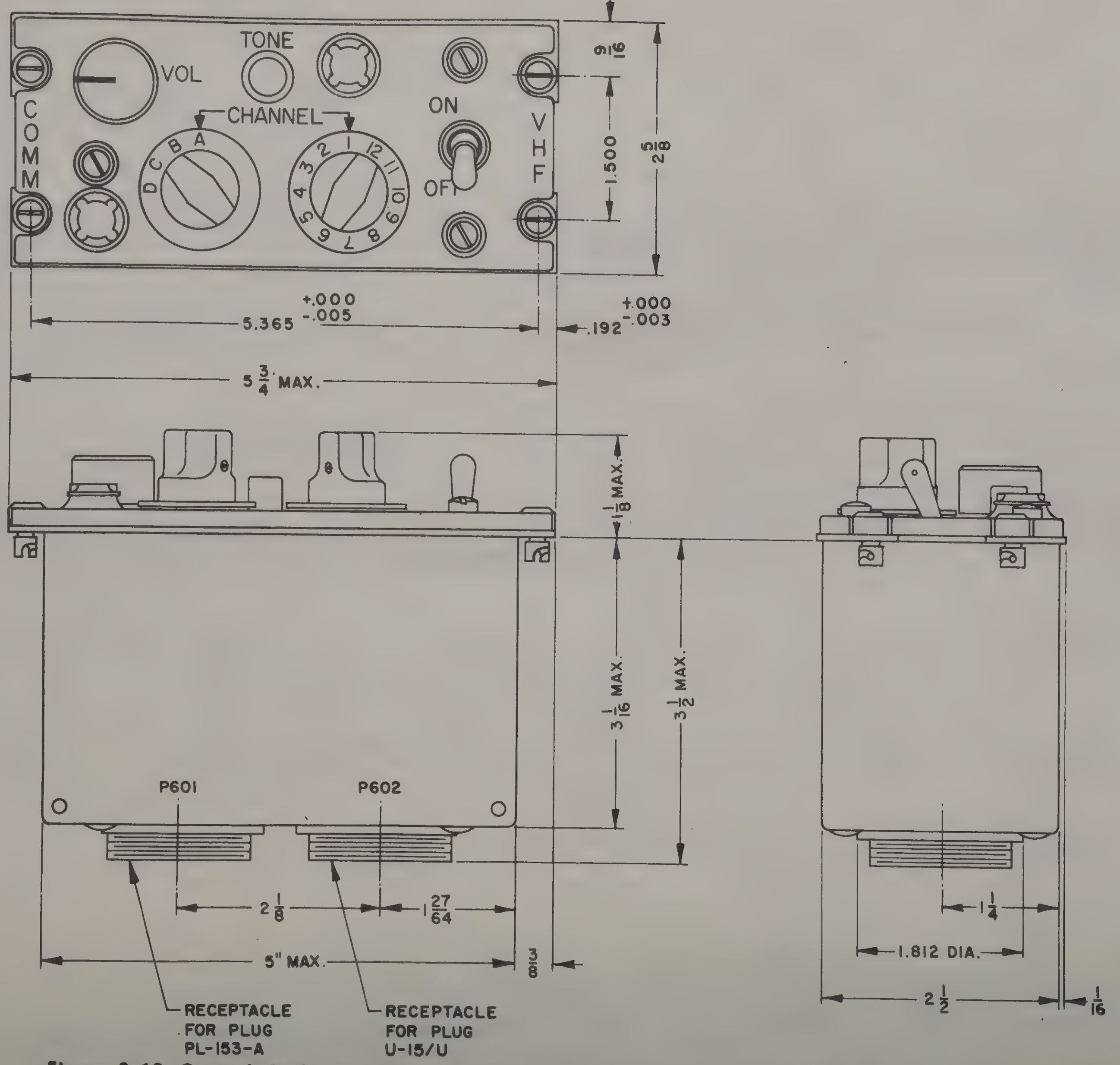
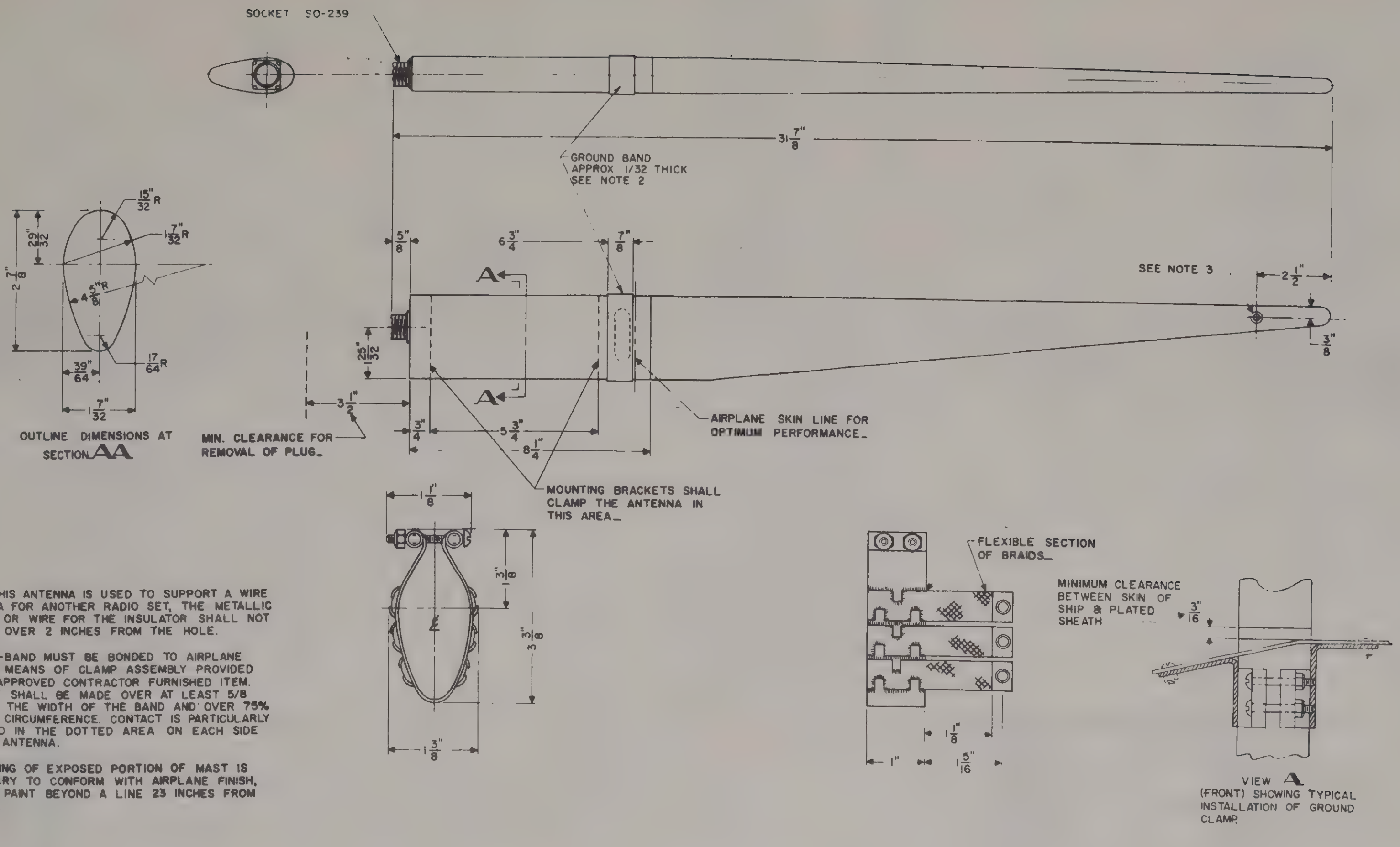

VOL
TONE
CHANNEL
A B C D
1 2 3 4 5 6 7 8 9 10 11 12
ON
OFF
COMM
VHF
9/16
1.500
2 5/8
+.000 -.005 5.365
+.000 -.003 .192
5 3/4 MAX.
1 1/8 MAX.
3 1/16 MAX.
3 1/2 MAX.
P601
P602
2 1/8
1 27/64
5" MAX.
3/8
1 1/4
1.812 DIA.
2 1/2
1/16
RECEPTACLE FOR PLUG PL-153-A
RECEPTACLE FOR PLUG U-15/U

Figure 8-13. Control, Radio Set C-1400/ARC-49—Outline Drawing and Mounting Dimensions


SOCKET SO-239
31 7/8"
GROUND BAND APPROX 1/32 THICK SEE NOTE 2
15/32" R
1 7/32" R
29/32"
2 7/8"
4 5/8" R
17/64 R
39/64"
1 7/32"
OUTLINE DIMENSIONS AT SECTION AA
5/8"
6 3/4"
7/8"
A
A
25/32"
3 1/2"
MIN. CLEARANCE FOR REMOVAL OF PLUG
3/4"
5 3/4"
8 1/4"
SEE NOTE 3
2 1/2"
3/8"
AIRPLANE SKIN LINE FOR OPTIMUM PERFORMANCE
MOUNTING BRACKETS SHALL CLAMP THE ANTENNA IN THIS AREA
1 1/8"
1 3/8"
3 3/8"
1 3/8"
℄
FLEXIBLE SECTION OF BRAIDS
MINIMUM CLEARANCE BETWEEN SKIN OF SHIP & PLATED SHEATH
3/16"
1 1/8"
1"
1 5/16"
VIEW A (FRONT) SHOWING TYPICAL INSTALLATION OF GROUND CLAMP

3 WHEN THIS ANTENNA IS USED TO SUPPORT A WIRE ANTENNA FOR ANOTHER RADIO SET, THE METALLIC FITTING OR WIRE FOR THE INSULATOR SHALL NOT EXTEND OVER 2 INCHES FROM THE HOLE.

2 GROUND-BAND MUST BE BONDED TO AIRPLANE SKIN BY MEANS OF CLAMP ASSEMBLY PROVIDED OR BY APPROVED CONTRACTOR FURNISHED ITEM. CONTACT SHALL BE MADE OVER AT LEAST 5/8 INCH OF THE WIDTH OF THE BAND AND OVER 75% OF THE CIRCUMFERENCE. CONTACT IS PARTICULARLY REQUIRED IN THE DOTTED AREA ON EACH SIDE OF THE ANTENNA.

1 IF PAINTING OF EXPOSED PORTION OF MAST IS NECESSARY TO CONFORM WITH AIRPLANE FINISH, DO NOT PAINT BEYOND A LINE 23 INCHES FROM THE TIP.

Figure 8-14. Antenna Mast AN-104-B—Outline Drawing and Mounting Dimensions

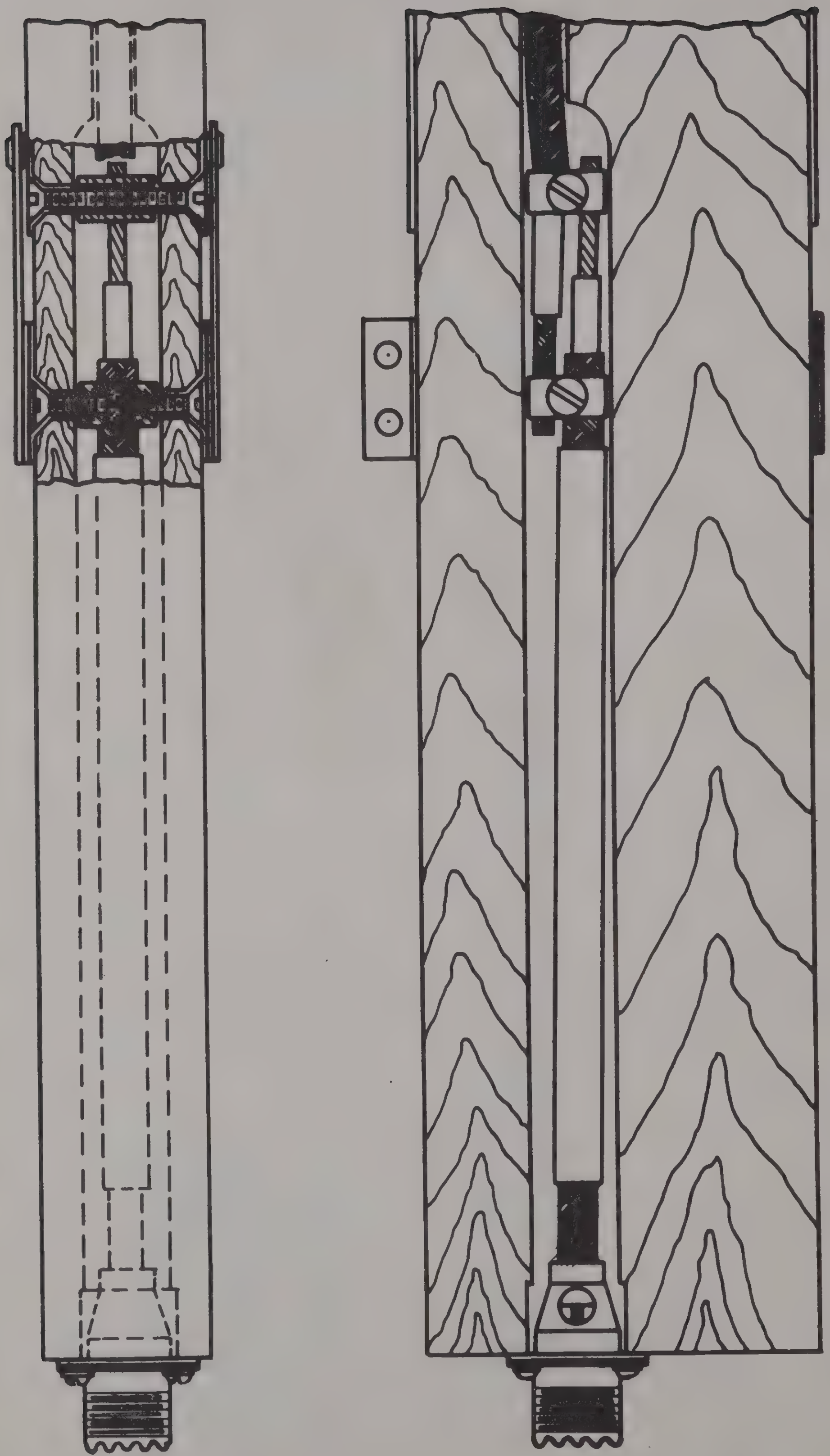
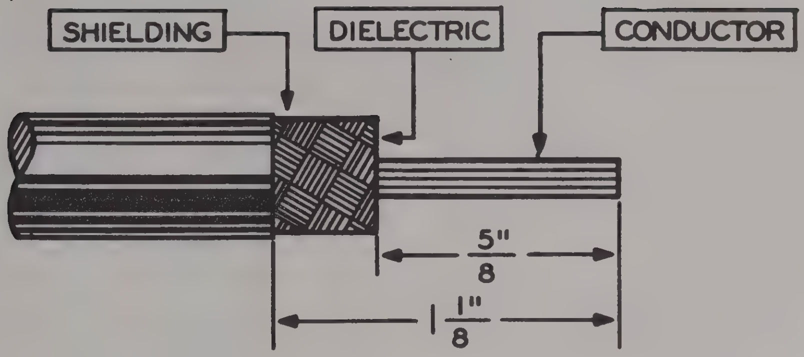
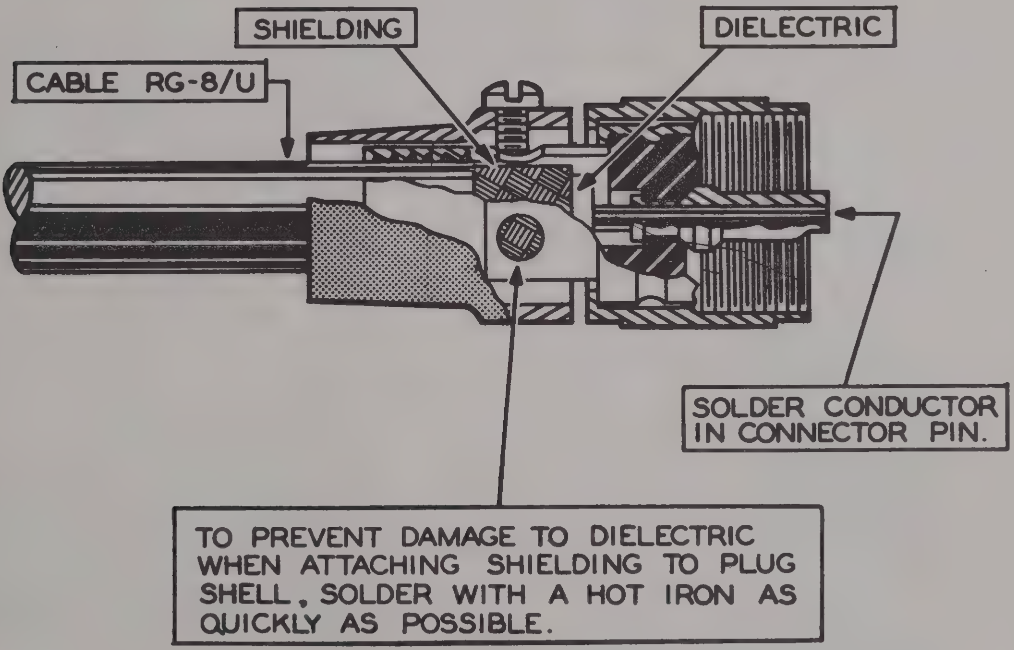


Figure 8-15. Antenna Mast AN-104-B—Internal Connections


SHIELDING
DIELECTRIC
CONDUCTOR
5"/8
1 1"/8

PREPARATION OF CABLE RG-8/U


SHIELDING
DIELECTRIC
CABLE RG-8/U

SOLDER CONDUCTOR IN CONNECTOR PIN.

TO PREVENT DAMAGE TO DIELECTRIC WHEN ATTACHING SHIELDING TO PLUG SHELL, SOLDER WITH A HOT IRON AS QUICKLY AS POSSIBLE.

ASSEMBLY OF CABLE RG-8/U TO PLUG PL-259-A

● MINIMUM BENDING RADIUS OF FLEXIBLE TRANSMISSION LINE TO BE NOT LESS THAN 5 INCHES.

Figure 8-16. Radio Sets AN/ARC-3, AN/ARC-36 and AN/ARC-49—Preparation of Antenna Lead-in

WIRE TABLE

EACH CABLE FOR THIS EQUIPMENT SHALL BE I
IN THE AIRPLANE WIRING DIAGRAM AND SHALL B
ED ON THE AIRPLANE WIRING IN ACCORDANCE
AN-W-14 EXCEPT THAT THE CABLE NUMBER
CABLE IDENTIFICATION CODING SHALL BE AS A
HEREIN.
(EXAMPLE OF THE FIRST WIRE IN THE TA
BELOW)

RV110A16

REF NOTE	WIRE NO.	MAX OPER. VOLTS	MAX ALLOWABLE RESIST. IN OHMS (71°C)	MIN CABLE SIZE PERMITTED	REF NOTE	WIRE NO.	MAX OPER. VOLTS	MAX ALLOW-ABL RESIS IN OHMS (71°
	101	0	△	16		177	0	0.2
	110	0	△	16		178	30	△
	116	0	0.08	18		179	30	△
△	151	30		16		180	0	0.0
	141	30	△	20		181	225	△
	142	30	△	20		182	30	1.0
	143	30	△	20		183	30	△
	144	30	△	20		185	30	0.3
	145	30	△	20		186	15	△
	146	30	△	20		114	30	△
	147	30	△	20		201	30	△
	148	30	△	20		202	30	△
	149	30	1.0	20		203	30	△
	250	30	△	20		204	30	△
	152	0	0.01	16		205	0	0.1
	115	30	△	20		206	30	△
	161	30	△	20		207	30	△
	162	0	0.16	20		208	30	△
	163	30	△	20		209	30	△
	166	15	△	20		210	450	△
	167	15	△	20		211	30	△
	171	30	△	20		212	30	1.
	172	30	△	20		213	30	0.
	173	30	△	20		214	15	△
	174	30	△	20		216	30	△
	175	30	△	20		221	30	△
	176	30	△	20		222	30	△
	252	R-F CABLE RG-8/U						
	253	R-F CABLE RG-8/U						

8. A CONTRACTOR FURNISHED ANTENNA MAY BE INSTALL
INSTEAD OF ANTENNA MAST AN-104-B.

7. PRODUCTION CHANGE CONVERTING R-77/ARC-3 TO
R-77A/ARC-3 ADDED GUARD CHANNEL INPUT.

6. PRODUCTION CHANGE CONVERTING T-67A/ARC-3 TO
T-67B/ARC-3 ADDED AN INPUT DESIGNED PRIMARILY
INTERCOMMUNICATION SET AN/AIC-10. WHEN USED WIT
INTERCOMMUNICATION SET AN/AIC-10, SET SWITCH S-10
TO "INTERCOM" POSITION. ACCESS TO THIS SWITCH IS
THROUGH A HOLE IN THE BOTTOM COVER OF THE TRA

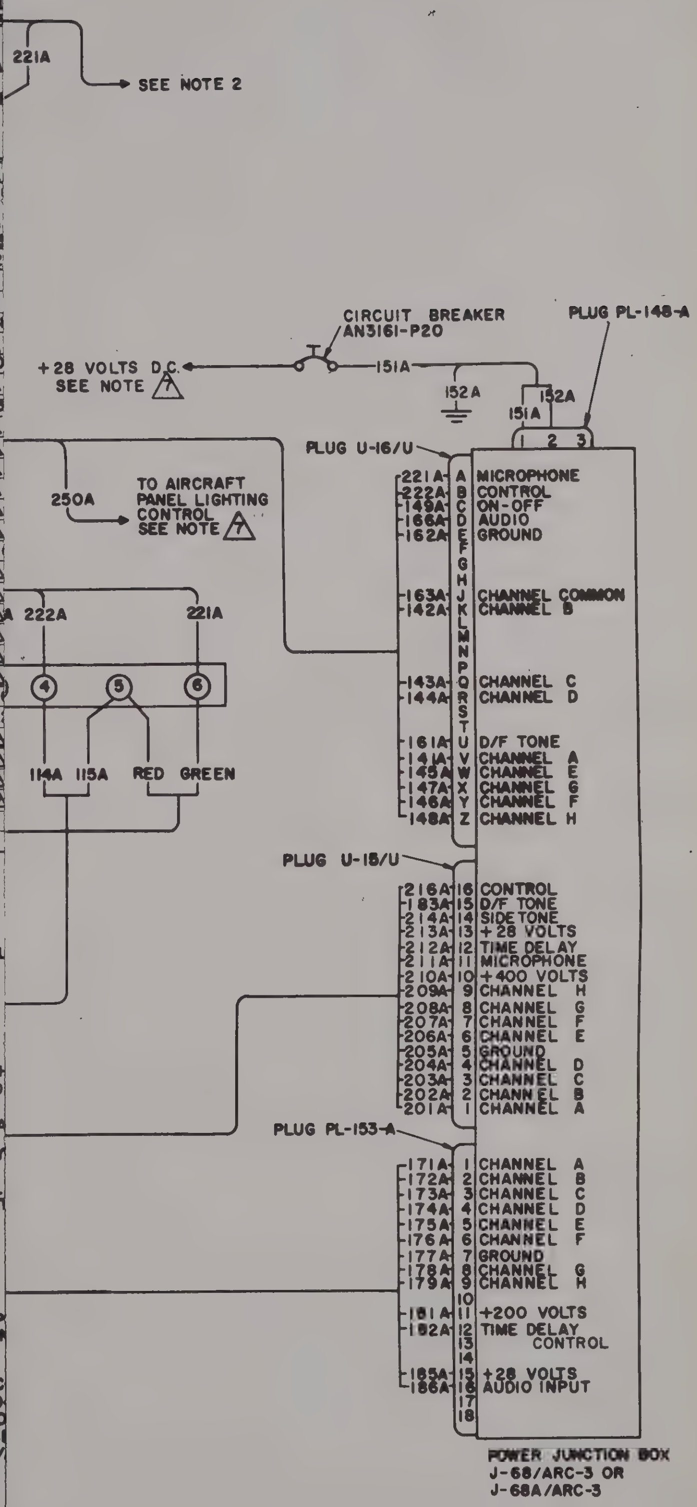
5. THE CONTRACTOR SHALL INSTALL A RESISTOR TY
RC-20BE151M OR RC-25BE151M (150 OHMS 1/2 WATT)
PER SPEC JAN-R-11 AND CONNECT IT TO TERMINAL
STRIP 2 AS SHOWN. THE RESISTOR IS A CONTRAC
FURNISHED ITEM.

4. CONTROL PANEL C-404/A DOES NOT INCLUDE
PANEL LIGHTING TERMINAL NUMBER 250.

3. WHEN RANGE RECEIVER OR RADIO COMPASS IS
INSTALLED IN FIGHTER AIRCRAFT, THE AUDIO OUTP
OF THESE SETS SHALL BE CONNECTED TO TERMI
2 ON TERMINAL STRIP 2.

2. WHEN CONTROL BOX C-118/ARC-3 OR C-118A/ARC
IS INSTALLED INSTEAD OF CONTROL PANEL C-40
OR C-404A/A TERMINAL STRIP 1 IS NOT REQUIRED
THE TWO PLUGS U-16/U ON THE CONTROL BOX AN
THE POWER JUNCTION BOX J-68/ARC-3 OR J-68A/
SHALL BE CONNECTED RESPECTIVELY AS SHOWN
THE DRAWING.

1. CONTROL PANEL C-404A/A OR C-404/A IS FURN
WITH CABLES ATTACHED, WHICH ARE LABELED W
THE RESPECTIVE WIRE NUMBERS AS INDICATED.
C-404A/A REQUIRES POWER FOR TWO LIGHT
ASSEMBLIES AN3502. SEE NOTE 4.


221A
SEE NOTE 2
CIRCUIT BREAKER AN3161-P20
PLUG PL-148-A
+28 VOLTS D.C. SEE NOTE 7
151A
152A
152A
151A
1 2 3
PLUG U-16/U
250A
TO AIRCRAFT PANEL LIGHTING CONTROL SEE NOTE 4
221A A MICROPHONE
222A B CONTROL
149A C ON-OFF
166A D AUDIO
162A E GROUND
F
G
H
163A J CHANNEL COMMON
142A K CHANNEL B
L
M
N
P
143A Q CHANNEL C
144A R CHANNEL D
S
T
161A U D/F TONE
141A V CHANNEL A
145A W CHANNEL E
147A X CHANNEL G
146A Y CHANNEL F
148A Z CHANNEL H
A 222A
221A
4
5
6
114A
115A
RED
GREEN
PLUG U-15/U
216A 16 CONTROL
183A 15 D/F TONE
214A 14 SIDE TONE
213A 13 +28 VOLTS
212A 12 TIME DELAY
211A 11 MICROPHONE
210A 10 +400 VOLTS
209A 9 CHANNEL H
208A 8 CHANNEL G
207A 7 CHANNEL F
206A 6 CHANNEL E
205A 5 GROUND
204A 4 CHANNEL D
203A 3 CHANNEL C
202A 2 CHANNEL B
201A 1 CHANNEL A
PLUG PL-153-A
171A 1 CHANNEL A
172A 2 CHANNEL B
173A 3 CHANNEL C
174A 4 CHANNEL D
175A 5 CHANNEL E
176A 6 CHANNEL F
177A 7 GROUND
178A 8 CHANNEL G
179A 9 CHANNEL H
10
181A 11 +200 VOLTS
182A 12 TIME DELAY CONTROL
13
14
185A 15 +28 VOLTS
186A 16 AUDIO INPUT
17
18
POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3

Fighter Installation Cording Diagram

WIRE TABLE

EACH CABLE FOR THIS EQUIPMENT SHALL BE IDENTIFIED IN THE AIRPLANE WIRING DIAGRAM AND SHALL BE LABELED ON THE AIRPLANE WIRING IN ACCORDANCE WITH AN-W-14 EXCEPT THAT THE CABLE NUMBER OF THE CABLE IDENTIFICATION CODING SHALL BE AS ASSIGNED HEREIN.

(EXAMPLE OF THE FIRST WIRE IN THE TABLE BELOW.)

RV110A16

REF NOTE	WIRE NO.	MAX OPER. VOLTS	MAX ALLOWABLE RESIST. IN OHMS (71°C)	MIN CABLE SIZE PERMITTED	REF NOTE	WIRE NO.	MAX OPER. VOLTS	MAX. ALLOWABLE RESIST. IN OHMS (71°C)	MIN CABLE SIZE PERMITTED
	101	0	△	16		177	0	0.2	16
	110	0	△	16		178	30	△	20
	116	0	0.08	18		179	30	△	20
△	151	30		16		180	0	0.08	16
	141	30	△	20		181	225	△	20
	142	30	△	20		182	30	1.0	20
	143	30	△	20		183	30	△	20
	144	30	△	20		185	30	0.3	18
	145	30	△	20		186	15	△	20
	146	30	△	20		114	30	△	20
	147	30	△	20		201	30	△	20
	148	30	△	20		202	30	△	20
	149	30	1.0	20		203	30	△	20
	250	30	△	20		204	30	△	20
	152	0	0.01	16		205	0	0.16	16
	115	30	△	20		206	30	△	20
	161	30	△	20		207	30	△	20
	162	0	0.16	20		208	30	△	20
	163	30	△	20		209	30	△	20
	166	15	△	20		210	450	△	20
	167	15	△	20		211	30	△	20
	171	30	△	20		212	30	1.0	20
	172	30	△	20		213	30	0.2	18
	173	30	△	20		214	15	△	20
	174	30	△	20		216	30	△	20
	175	30	△	20		221	30	△	20
	176	30	△	20		222	30	△	20
	252	R-F CABLE RG-8/U							
	253	R-F CABLE RG-8/U							

8. A CONTRACTOR FURNISHED ANTENNA MAY BE INSTALLED INSTEAD OF ANTENNA MAST AN-104-B.

7. PRODUCTION CHANGE CONVERTING R-77/ARC-3 TO R-77A/ARC-3 ADDED GUARD CHANNEL INPUT.

6. PRODUCTION CHANGE CONVERTING T-67A/ARC-3 TO T-67B/ARC-3 ADDED AN INPUT DESIGNED PRIMARILY FOR INTERCOMMUNICATION SET AN/AIC-10. WHEN USED WITH INTERCOMMUNICATION SET AN/AIC-10, SET SWITCH S-103 TO "INTERCOM" POSITION. ACCESS TO THIS SWITCH IS THROUGH A HOLE IN THE BOTTOM COVER OF THE TRANSMITTER.

5. THE CONTRACTOR SHALL INSTALL A RESISTOR TYPE RC-20BE151M OR RC-25BE151M (150 OHMS 1/2 WATT) PER SPEC JAN-R-11 AND CONNECT IT TO TERMINAL STRIP 2 AS SHOWN. THE RESISTOR IS A CONTRACTOR FURNISHED ITEM.

4. CONTROL PANEL C-404/A DOES NOT INCLUDE PANEL LIGHTING TERMINAL NUMBER 250.

3. WHEN RANGE RECEIVER OR RADIO COMPASS IS INSTALLED IN FIGHTER AIRCRAFT, THE AUDIO OUTPUT OF THESE SETS SHALL BE CONNECTED TO TERMINAL 2 ON TERMINAL STRIP 2.

2. WHEN CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3 IS INSTALLED INSTEAD OF CONTROL PANEL C-404/A OR C-404A/A TERMINAL STRIP 1 IS NOT REQUIRED. THE TWO PLUGS U-16/U ON THE CONTROL BOX AND THE POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3 SHALL BE CONNECTED RESPECTIVELY AS SHOWN ON THE DRAWING.

1. CONTROL PANEL C-404A/A OR C-404/A IS FURNISHED WITH CABLES ATTACHED, WHICH ARE LABELED WITH THE RESPECTIVE WIRE NUMBERS AS INDICATED. C-404A/A REQUIRES POWER FOR TWO LIGHT ASSEMBLIES AN3502. SEE NOTE 4.

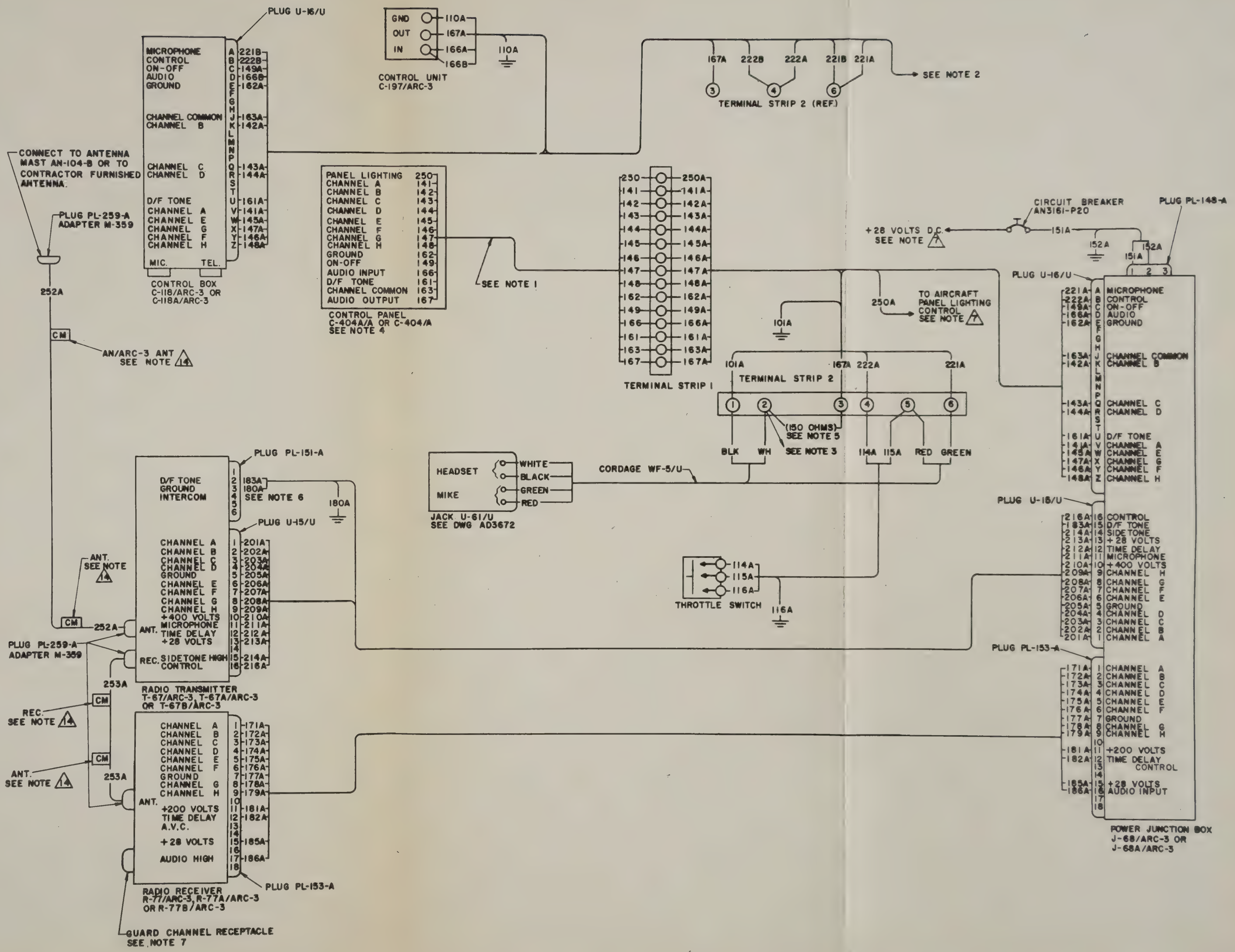

PLUG U-16/U
MICROPHONE
CONTROL
ON-OFF
AUDIO
GROUND
CHANNEL COMMON
CHANNEL B
CHANNEL C
CHANNEL D
D/F TONE
CHANNEL A
CHANNEL E
CHANNEL G
CHANNEL F
CHANNEL H
MIC.
TEL.
221B
222B
149A
166B
162A
163A
142A
143A
144A
161A
141A
145A
147A
146A
148A
CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3
CONNECT TO ANTENNA MAST AN-104-B OR TO CONTRACTOR FURNISHED ANTENNA.
PLUG PL-259-A ADAPTER M-359
252A
CM
AN/ARC-3 ANT SEE NOTE 14
GND
OUT
IN
110A
167A
166A
166B
CONTROL UNIT C-197/ARC-3
167A
222B
222A
221B
221A
SEE NOTE 2
TERMINAL STRIP 2 (REF.)
PANEL LIGHTING 250
CHANNEL A 141
CHANNEL B 142
CHANNEL C 143
CHANNEL D 144
CHANNEL E 145
CHANNEL F 146
CHANNEL G 147
CHANNEL H 148
GROUND 162
ON-OFF 149
AUDIO INPUT 166
D/F TONE 161
CHANNEL COMMON 163
AUDIO OUTPUT 167
CONTROL PANEL C-404A/A OR C-404/A SEE NOTE 4
SEE NOTE 1
250 141 142 143 144 145 146 147 148 162 149 166 161 163 167
250A 141A 142A 143A 144A 145A 146A 147A 148A 162A 149A 166A 161A 163A 167A
TERMINAL STRIP 1
CIRCUIT BREAKER AN3161-P20
PLUG PL-148-A
+28 VOLTS D.C. SEE NOTE 7
151A
152A
250A
TO AIRCRAFT PANEL LIGHTING CONTROL SEE NOTE 7
101A
101A
167A
222A
221A
TERMINAL STRIP 2
(150 OHMS) SEE NOTE 5
SEE NOTE 3
BLK
WH
114A
115A
RED
GREEN
HEADSET
MIKE
WHITE
BLACK
GREEN
RED
CORDAGE WF-5/U
JACK U-61/U SEE DWG AD3672
114A
115A
116A
THROTTLE SWITCH
116A
PLUG U-16/U
PLUG U-15/U
216A 16 CONTROL
183A 15 D/F TONE
214A 14 SIDE TONE
213A 13 +28 VOLTS
212A 12 TIME DELAY
211A 11 MICROPHONE
210A 10 +400 VOLTS
209A 9 CHANNEL H
208A 8 CHANNEL G
207A 7 CHANNEL F
206A 6 CHANNEL E
205A 5 GROUND
204A 4 CHANNEL D
203A 3 CHANNEL C
202A 2 CHANNEL B
201A 1 CHANNEL A
PLUG PL-153-A
171A 1 CHANNEL A
172A 2 CHANNEL B
173A 3 CHANNEL C
174A 4 CHANNEL D
175A 5 CHANNEL E
176A 6 CHANNEL F
177A 7 GROUND
178A 8 CHANNEL G
179A 9 CHANNEL H
181A 11 +200 VOLTS
182A 12 TIME DELAY CONTROL
185A 15 +28 VOLTS
186A 16 AUDIO INPUT
POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3
PLUG PL-151-A
D/F TONE
GROUND
INTERCOM
183A
180A
SEE NOTE 6
180A
CHANNEL A
CHANNEL B
CHANNEL C
CHANNEL D
GROUND
CHANNEL E
CHANNEL F
CHANNEL G
CHANNEL H
+400 VOLTS
MICROPHONE
TIME DELAY
+28 VOLTS
SIDETONE HIGH
CONTROL
ANT.
REC.
ANT. SEE NOTE 14
252A
PLUG PL-259-A ADAPTER M-359
253A
CM
REC. SEE NOTE 14
ANT. SEE NOTE 14
RADIO TRANSMITTER T-67/ARC-3, T-67A/ARC-3 OR T-67B/ARC-3
CHANNEL A
CHANNEL B
CHANNEL C
CHANNEL D
CHANNEL E
CHANNEL F
GROUND
CHANNEL G
CHANNEL H
+200 VOLTS
TIME DELAY
A.V.C.
+28 VOLTS
AUDIO HIGH
ANT.
171A 172A 173A 174A 175A 176A 177A 178A 179A 181A 182A 185A 186A
PLUG PL-153-A
RADIO RECEIVER R-77/ARC-3, R-77A/ARC-3 OR R-77B/ARC-3
GUARD CHANNEL RECEPTACLE SEE NOTE 7

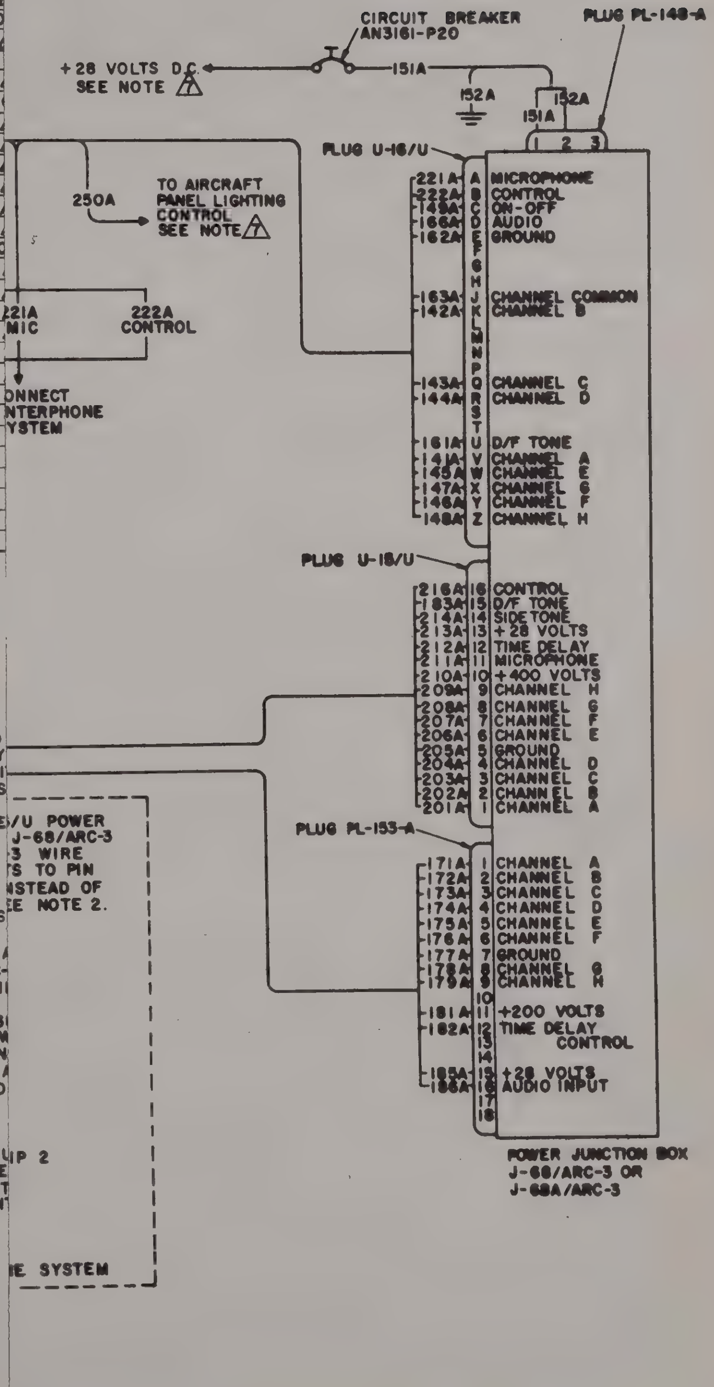
Figure 8-17. Radio Set AN/ARC-3—Fighter Installation Cording Diagram

WIRE TABLE

EACH CABLE FOR THIS EQUIPMENT SHALL
IN THE AIRPLANE WIRING DIAGRAM AND SHAL
ED ON THE AIRPLANE WIRING IN ACCORDAN
AN-W-14 EXCEPT THAT THE CABLE NUMB
CABLE IDENTIFICATION CODING SHALL BE A
HEREIN.
(EXAMPLE OF THE FIRST WIRE IN THE
BELOW)

RV110A16

REF NOTE	WIRE NO.	MAX OPER. VOLTS	MAX ALLOW-ABLE RESIST. IN OHMS (71° C)	MIN CABLE SIZE PER-MITTED	REF NOTE	WIRE NO.	MAX OPER. VOLTS
	110	0	△	16		177	0
						178	30
						179	30
△	151	30		16		180	0
	141	30	△	20		181	225
	142	30	△	20		182	30
	143	30	△	20		183	30
	144	30	△	20		185	30
	145	30	△	20		186	15
	146	30	△	20		200	15
	147	30	△	20		201	30
	148	30	△	20		202	30
	149	30	1.0	20		203	30
	250	30	△	20		204	30
	152	0	0.01	16		205	0
						206	30
	161	30	△	20		207	30
	162	0	0.16	20		208	30
	163	30	△	20		209	30
	166	15	△	20		210	450
	167	15	△	20		211	30
	171	30	△	20		212	30
	172	30	△	20		213	30
	173	30	△	20		214	15
	174	30	△	20		216	30
	175	30	△	20		221	30
	176	30	△	20		222	30
	252	R-F CABLE RG-8/U					
	253	R-F CABLE RG-8/U					


CIRCUIT BREAKER
AN3161-P20
PLUG PL-148-A
+28 VOLTS D.C.
SEE NOTE △
151A
152A
152A
151A
1 2 3
PLUG U-16/U
250A
TO AIRCRAFT PANEL LIGHTING CONTROL SEE NOTE △
221A MIC
222A CONTROL
ONNECT
NTERPHONE
YSTEM
221A A MICROPHONE
222A B CONTROL
149A C ON-OFF
166A D AUDIO
162A E GROUND
F
G
H
163A J CHANNEL COMMON
142A K CHANNEL B
L
M
N
P
143A Q CHANNEL C
144A R CHANNEL D
S
T
161A U D/F TONE
141A V CHANNEL A
145A W CHANNEL E
147A X CHANNEL G
146A Y CHANNEL F
148A Z CHANNEL H
PLUG U-18/U
216A 16 CONTROL
183A 15 D/F TONE
214A 14 SIDE TONE
213A 13 +28 VOLTS
212A 12 TIME DELAY
211A 11 MICROPHONE
210A 10 +400 VOLTS
209A 9 CHANNEL H
208A 8 CHANNEL G
207A 7 CHANNEL F
206A 6 CHANNEL E
205A 5 GROUND
204A 4 CHANNEL D
203A 3 CHANNEL C
202A 2 CHANNEL B
201A 1 CHANNEL A
PLUG PL-153-A
171A 1 CHANNEL A
172A 2 CHANNEL B
173A 3 CHANNEL C
174A 4 CHANNEL D
175A 5 CHANNEL E
176A 6 CHANNEL F
177A 7 GROUND
178A 8 CHANNEL G
179A 9 CHANNEL H
10
181A 11 +200 VOLTS
182A 12 TIME DELAY CONTROL
13
14
185A 15 +28 VOLTS
186A 16 AUDIO INPUT
17
18
POWER JUNCTION BOX
J-68/ARC-3 OR
J-68A/ARC-3
/U POWER
J-68/ARC-3
3 WIRE
TS TO PIN
NSTEAD OF
E NOTE 2.
IP 2
E SYSTEM

6. PRODUCTION CHANGE CONVERTING R-77/ARC-3 TO R-77A/ARC-3 ADDED GUARD CHANNEL INPUT.

5. PRODUCTION CHANGE CONVERTING T-67A/ARC-3 TO T-67B/ARC-3 ADDED AN INPUT DESIGNED PRIMARILY
INTERCOMMUNICATION SET AN/AIC-10, WHEN USED WI
INTERCOMMUNICATION SET AN/AIC-10, SET SWITCH S
"INTERCOM" POSITION. ACCESS TO THIS SWITCH IS
THROUGH A HOLE IN THE BOTTOM COVER OF THE
TRANSMITTER.

4. CONTROL PANEL C-404/A DOES NOT INCLUDE PANEL LIGHTING TERMINAL NUMBER 250.

3. A CONTRACTOR FURNISHED ANTENNA MAY BE INS
INSTEAD OF ANTENNA MAST AN-104-B.

2. WHEN CONTROL BOX C-118/ARC-3 OR C-118A/
IS INSTALLED INSTEAD OF CONTROL PANEL C-
OR C-404A/A TERMINAL STRIP 1 IS NOT REQUI
THE TWO PLUGS U-16/U ON THE CONTROL BOX
THE POWER JUNCTION BOX J-68/ARC-3 OR J-6
SHALL BE CONNECTED RESPECTIVELY AS SHOW
THE DRAWING, AND BOTH PLUGS SHALL BE CONN
TO TERMINAL STRIP 2 AS SHOWN IN FIG. A.
CONTROL UNIT C-197/ARC-3 IS REQUIRED AND
BE CONNECTED AS SHOWN.

1. CONTROL PANEL C-404A/A OR C-404/A IS F
WITH CABLES ATTACHED, WHICH ARE LABELE
THE RESPECTIVE WIRE NUMBERS AS INDICAT
C-404A/A REQUIRES POWER FOR TWO LIGH
ASSEMBLIES AN3502. SEE NOTE 4.

ultiplace Installation Cording Diagram

WIRE TABLE

EACH CABLE FOR THIS EQUIPMENT SHALL BE IDENTIFIED IN THE AIRPLANE WIRING DIAGRAM AND SHALL BE LABELED ON THE AIRPLANE WIRING IN ACCORDANCE WITH AN-W-14 EXCEPT THAT THE CABLE NUMBER OF THE CABLE IDENTIFICATION CODING SHALL BE AS ASSIGNED HEREIN.

(EXAMPLE OF THE FIRST WIRE IN THE TABLE BELOW)

RV110A16

REF NOTE	WIRE NO.	MAX OPER. VOLTS	MAX ALLOWABLE RESIST. IN OHMS (71°C)	MIN CABLE SIZE PERMITTED	REF NOTE	WIRE NO.	MAX OPER. VOLTS	MAX ALLOWABLE RESIST. IN OHMS (71°C)	MIN CABLE SIZE PERMITTED
	110	0	△	16		177	0	0.2	16
						178	30	△	20
						179	30	△	20
△	151	30		16		180	0	0.08	16
	141	30	△	20		181	225	△	20
	142	30	△	20		182	30	1.0	20
	143	30	△	20		183	30	△	20
	144	30	△	20		185	30	0.3	18
	145	30	△	20		186	15	△	20
	146	30	△	20		200	15	△	20
	147	30	△	20		201	30	△	20
	148	30	△	20		202	30	△	20
	149	30	1.0	20		203	30	△	20
	250	30	△	20		204	30	△	20
	152	0	0.01	16		205	0	0.16	16
						206	30	△	20
	161	30	△	20		207	30	△	20
	162	0	0.16	20		208	30	△	20
	163	30	△	20		209	30	△	20
	166	15	△	20		210	450	△	20
	167	15	△	20		211	30	△	20
	171	30	△	20		212	30	1.0	20
	172	30	△	20		213	30	0.2	18
	173	30	△	20		214	15	△	20
	174	30	△	20		216	30	△	20
	175	30	△	20		221	30	△	20
	176	30	△	20		222	30	△	20
	252	R-F CABLE RG-8/U							
	253	R-F CABLE RG-8/U							

6. PRODUCTION CHANGE CONVERTING R-77/ARC-3 TO R-77A/ARC-3 ADDED GUARD CHANNEL INPUT.

5. PRODUCTION CHANGE CONVERTING T-67A/ARC-3 TO T-67B/ARC-3 ADDED AN INPUT DESIGNED PRIMARILY FOR INTERCOMMUNICATION SET AN/AIC-10, WHEN USED WITH INTERCOMMUNICATION SET AN/AIC-10, SET SWITCH S-103 TO "INTERCOM" POSITION. ACCESS TO THIS SWITCH IS THROUGH A HOLE IN THE BOTTOM COVER OF THE TRANSMITTER.

4. CONTROL PANEL C-404/A DOES NOT INCLUDE PANEL LIGHTING TERMINAL NUMBER 250.

3. A CONTRACTOR FURNISHED ANTENNA MAY BE INSTALLED INSTEAD OF ANTENNA MAST AN-104-B.

2. WHEN CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3 IS INSTALLED INSTEAD OF CONTROL PANEL C-404/A OR C-404A/A TERMINAL STRIP 1 IS NOT REQUIRED. THE TWO PLUGS U-16/U ON THE CONTROL BOX AND THE POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3 SHALL BE CONNECTED RESPECTIVELY AS SHOWN ON THE DRAWING, AND BOTH PLUGS SHALL BE CONNECTED TO TERMINAL STRIP 2 AS SHOWN IN FIG. A. A CONTROL UNIT C-197/ARC-3 IS REQUIRED AND SHALL BE CONNECTED AS SHOWN.

1. CONTROL PANEL C-404A/A OR C-404/A IS FURNISHED WITH CABLES ATTACHED, WHICH ARE LABELED WITH THE RESPECTIVE WIRE NUMBERS AS INDICATED. C-404A/A REQUIRES POWER FOR TWO LIGHT ASSEMBLIES AN3502. SEE NOTE 4.

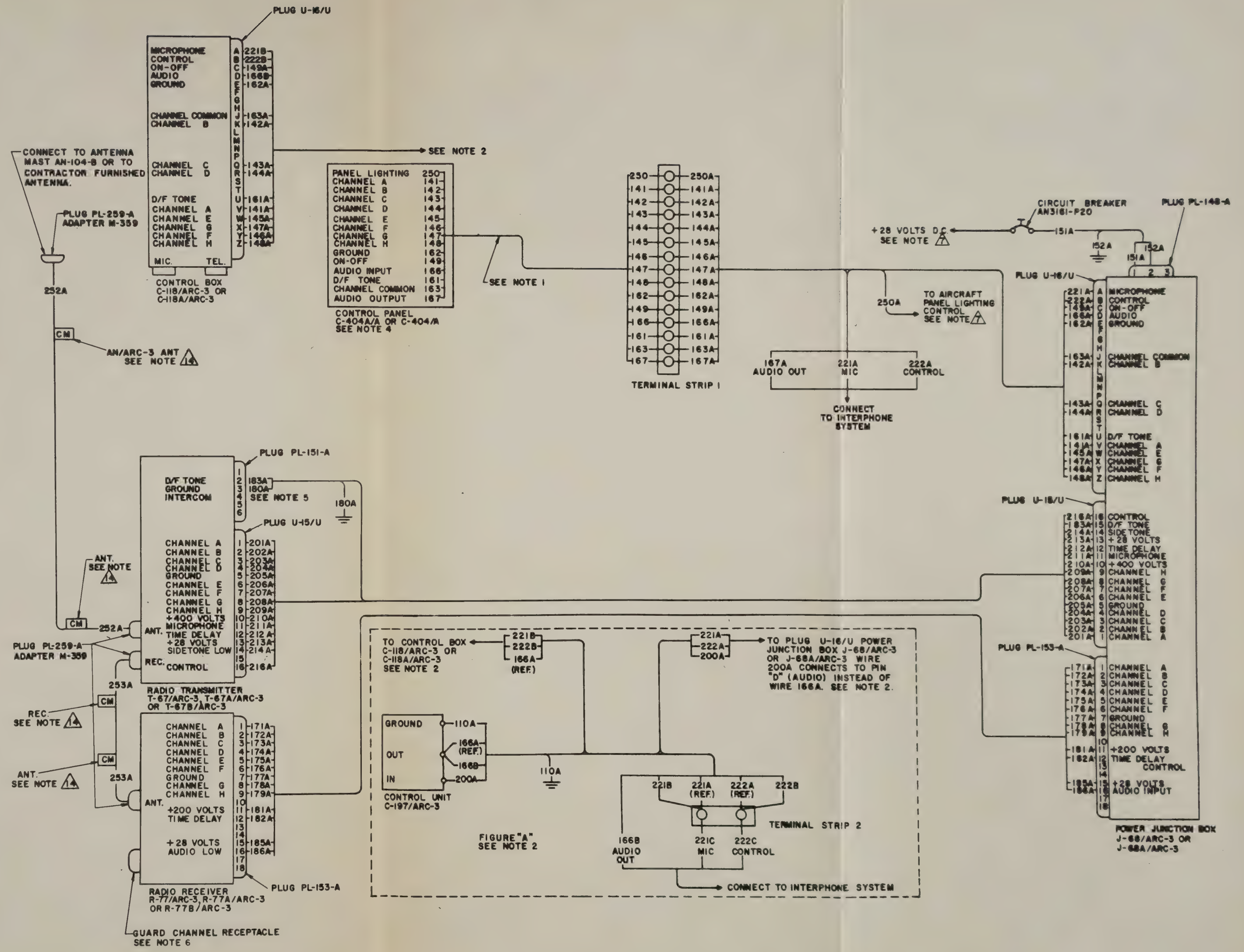
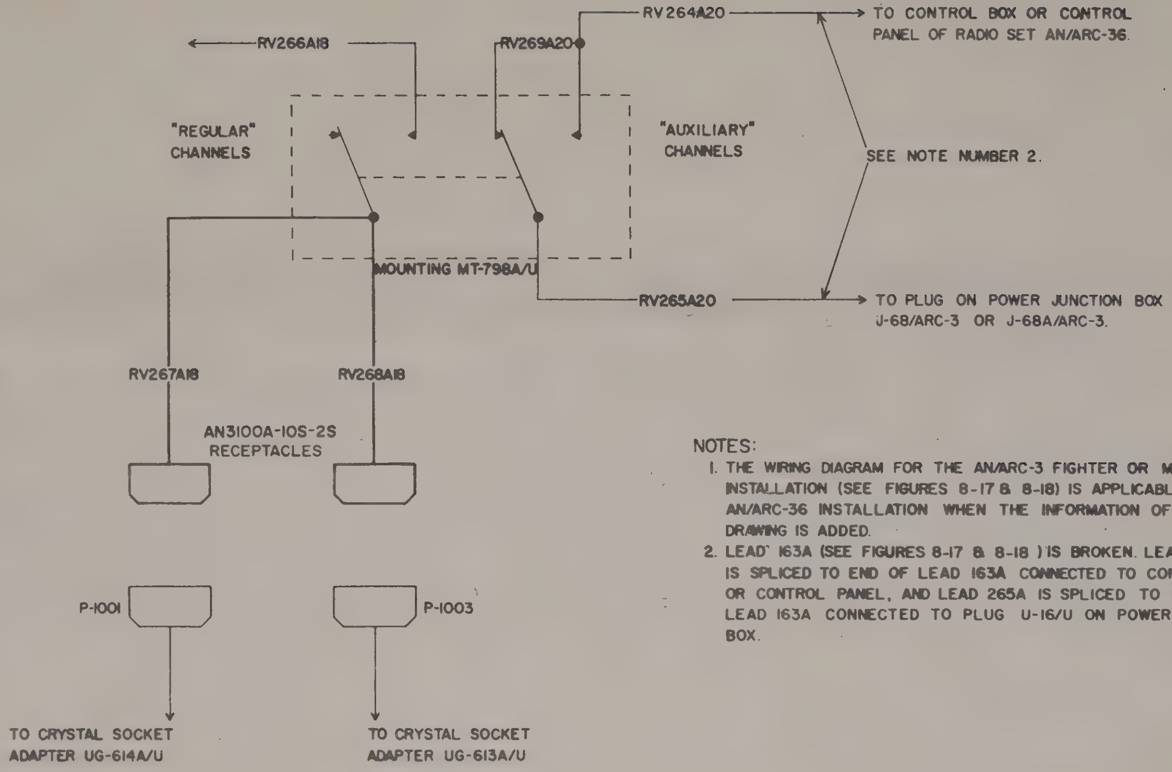

PLUG U-16/U
MICROPHONE
CONTROL
ON-OFF
AUDIO
GROUND
CHANNEL COMMON
CHANNEL B
CHANNEL C
CHANNEL D
D/F TONE
CHANNEL A
CHANNEL E
CHANNEL G
CHANNEL F
CHANNEL H
MIC.
TEL.
221B
222B
149A
166B
162A
163A
142A
143A
144A
161A
141A
145A
147A
146A
148A
CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3
SEE NOTE 2
CONNECT TO ANTENNA MAST AN-104-B OR TO CONTRACTOR FURNISHED ANTENNA.
PLUG PL-259-A ADAPTER M-359
252A
CM
AN/ARC-3 ANT SEE NOTE △
PANEL LIGHTING 250
CHANNEL A 141
CHANNEL B 142
CHANNEL C 143
CHANNEL D 144
CHANNEL E 145
CHANNEL F 146
CHANNEL G 147
CHANNEL H 148
GROUND 162
ON-OFF 149
AUDIO INPUT 166
D/F TONE 161
CHANNEL COMMON 163
AUDIO OUTPUT 167
CONTROL PANEL C-404A/A OR C-404/A SEE NOTE 4
SEE NOTE 1
250 141 142 143 144 145 146 147 148 162 149 166 161 163 167
250A 141A 142A 143A 144A 145A 146A 147A 148A 162A 149A 166A 161A 163A 167A
TERMINAL STRIP 1
250A
TO AIRCRAFT PANEL LIGHTING CONTROL SEE NOTE △
167A AUDIO OUT
221A MIC
222A CONTROL
CONNECT TO INTERPHONE SYSTEM
CIRCUIT BREAKER AN3161-P20
+28 VOLTS D.C. SEE NOTE △
151A
152A
PLUG PL-148-A
1 2 3
PLUG U-16/U
221A 222A 149A 166A 162A 163A 142A 143A 144A 161A 141A 145A 147A 146A 148A
MICROPHONE
CONTROL
ON-OFF
AUDIO
GROUND
CHANNEL COMMON
CHANNEL B
CHANNEL C
CHANNEL D
D/F TONE
CHANNEL A
CHANNEL E
CHANNEL G
CHANNEL F
CHANNEL H
PLUG U-15/U
216A 16 CONTROL
183A 15 D/F TONE
214A 14 SIDE TONE
213A 13 +28 VOLTS
212A 12 TIME DELAY
211A 11 MICROPHONE
210A 10 +400 VOLTS
209A 9 CHANNEL H
208A 8 CHANNEL G
207A 7 CHANNEL F
206A 6 CHANNEL E
205A 5 GROUND
204A 4 CHANNEL D
203A 3 CHANNEL C
202A 2 CHANNEL B
201A 1 CHANNEL A
PLUG PL-153-A
171A 1 CHANNEL A
172A 2 CHANNEL B
173A 3 CHANNEL C
174A 4 CHANNEL D
175A 5 CHANNEL E
176A 6 CHANNEL F
177A 7 GROUND
178A 8 CHANNEL G
179A 9 CHANNEL H
181A 11 +200 VOLTS
182A 12 TIME DELAY CONTROL
185A 15 +28 VOLTS
186A 16 AUDIO INPUT
POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3
PLUG PL-151-A
D/F TONE
GROUND
INTERCOM
183A
180A
SEE NOTE 5
180A
PLUG U-15/U
CHANNEL A 1 201A
CHANNEL B 2 202A
CHANNEL C 3 203A
CHANNEL D 4 204A
GROUND 5 205A
CHANNEL E 6 206A
CHANNEL F 7 207A
CHANNEL G 8 208A
CHANNEL H 9 209A
+400 VOLTS 10 210A
MICROPHONE 11 211A
TIME DELAY 12 212A
+28 VOLTS 13 213A
SIDETONE LOW 14 214A
CONTROL 16 216A
ANT.
REC.
ANT. SEE NOTE △
PLUG PL-259-A ADAPTER M-359
252A
253A
CM
REC. SEE NOTE △
ANT. SEE NOTE △
RADIO TRANSMITTER T-67/ARC-3, T-67A/ARC-3 OR T-67B/ARC-3
CHANNEL A 1 171A
CHANNEL B 2 172A
CHANNEL C 3 173A
CHANNEL D 4 174A
CHANNEL E 5 175A
CHANNEL F 6 176A
GROUND 7 177A
CHANNEL G 8 178A
CHANNEL H 9 179A
+200 VOLTS 11 181A
TIME DELAY 12 182A
+28 VOLTS 15 185A
AUDIO LOW 16 186A
PLUG PL-153-A
RADIO RECEIVER R-77/ARC-3, R-77A/ARC-3 OR R-77B/ARC-3
GUARD CHANNEL RECEPTACLE SEE NOTE 6
TO CONTROL BOX C-118/ARC-3 OR C-118A/ARC-3 SEE NOTE 2
221B
222B
166A (REF.)
221A
222A
200A
TO PLUG U-16/U POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3 WIRE 200A CONNECTS TO PIN "D" (AUDIO) INSTEAD OF WIRE 166A. SEE NOTE 2.
GROUND
OUT
IN
110A
166A (REF.)
166B
200A
110A
CONTROL UNIT C-197/ARC-3
221B
221A (REF.)
222A (REF.)
222B
TERMINAL STRIP 2
FIGURE "A" SEE NOTE 2
166B AUDIO OUT
221C MIC
222C CONTROL
CONNECT TO INTERPHONE SYSTEM

Figure 8-18. Radio Set AN/ARC-3 —Multiplace Installation Cording Diagram

WIRE TABLE I		
WIRE NO.	CONDUCTED CURRENT AMPS.	MAX. ALLOWABLE VOLTAGE DROP
264A	.1	TABLE II
265A	.1	TABLE II
266A	.4	TABLE II
267A	.2	TABLE II
268A	.2	TABLE II
269A	.1	TABLE II

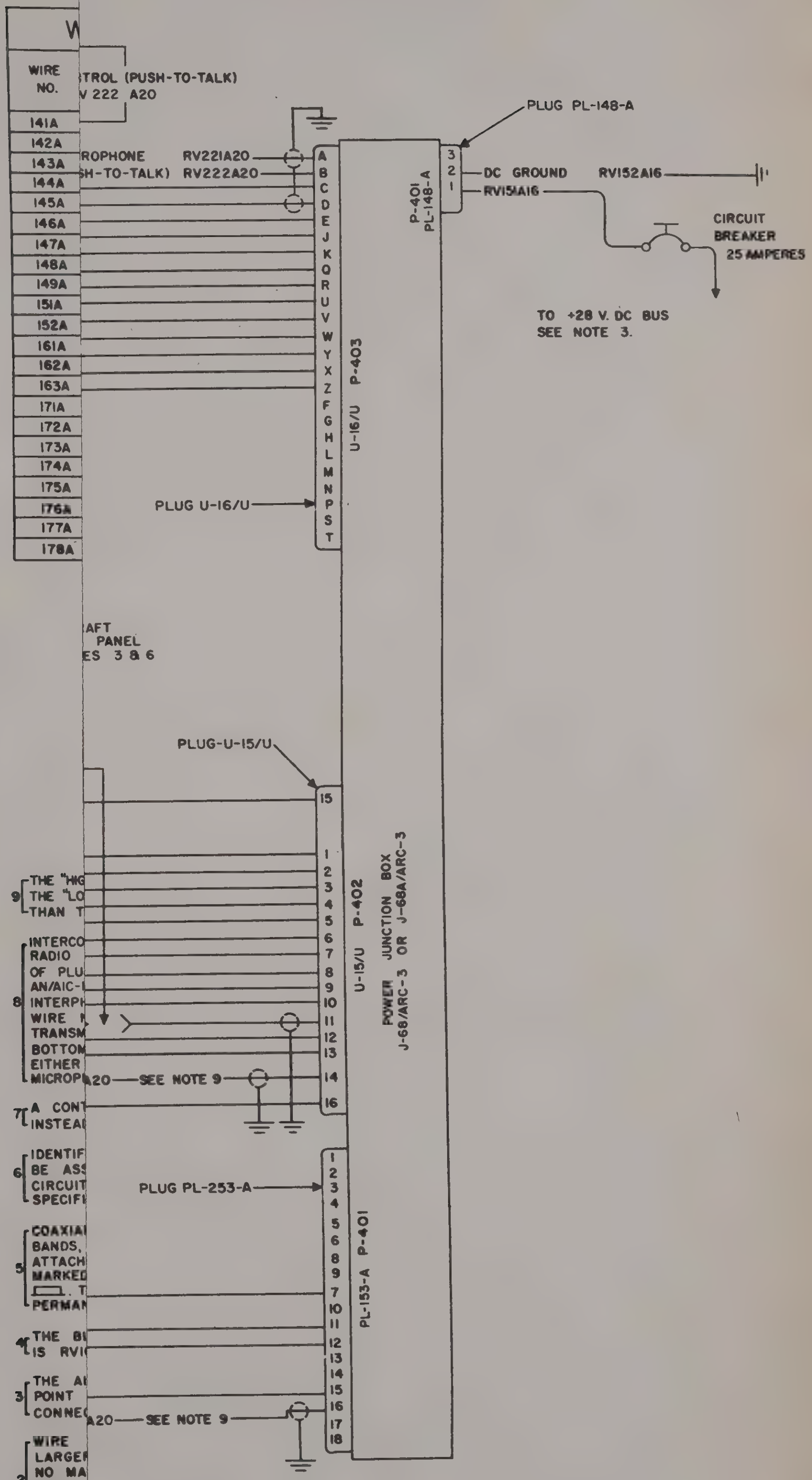
WIRE TABLE II	
CIRCUIT	MAX. ALLOWABLE VOLTAGE DROP VOLTS
151A + 149A + 266A + 267A + 177A + 152A	1
151A + 149A + 266A + 268A + 205A + 152A	1
151A + 185A + 171A + 141A + 163A + 264A + 265A + 269A	1
151A + 213A + 201A + 141A + 163A + 264A + 265A + 269A	1
151A + 213A + 201A + 141A + 163A + 264A + 265A + 269A	1


RV264A20
TO CONTROL BOX OR CONTROL PANEL OF RADIO SET AN/ARC-36.
RV266A18
RV269A20
"REGULAR" CHANNELS
"AUXILIARY" CHANNELS
SEE NOTE NUMBER 2.
MOUNTING MT-798A/U
RV265A20
TO PLUG ON POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3.
RV267A18
RV268A18
AN3100A-10S-2S RECEPTACLES
P-1001
P-1003
TO CRYSTAL SOCKET ADAPTER UG-614A/U
TO CRYSTAL SOCKET ADAPTER UG-613A/U

NOTES:

1. THE WIRING DIAGRAM FOR THE AN/ARC-3 FIGHTER OR MULTIPLACE INSTALLATION (SEE FIGURES 8-17 & 8-18) IS APPLICABLE TO THE AN/ARC-36 INSTALLATION WHEN THE INFORMATION OF THIS DRAWING IS ADDED.
2. LEAD 163A (SEE FIGURES 8-17 & 8-18) IS BROKEN. LEAD 264A IS SPLICED TO END OF LEAD 163A CONNECTED TO CONTROL BOX OR CONTROL PANEL, AND LEAD 265A IS SPLICED TO END OF LEAD 163A CONNECTED TO PLUG U-16/U ON POWER JUNCTION BOX.

Figure 8-19. Radio Set AN/ARC-36—Installation Cording Diagram


W
WIRE NO.
141A
142A
143A
144A
145A
146A
147A
148A
149A
151A
152A
161A
162A
163A
171A
172A
173A
174A
175A
176A
177A
178A
TROL (PUSH-TO-TALK)
V 222 A20
ROPHONE RV221A20
SH-TO-TALK) RV222A20
A B C D E J K O R U V W Y X Z F G H L M N P S T
U-16/U P-403
PLUG U-16/U
PLUG PL-148-A
P-401 PL-148-A
3 2 1
DC GROUND RV152A16
RV151A16
CIRCUIT BREAKER 25 AMPERES
TO +28 V. DC BUS SEE NOTE 3.
AFT PANEL
ES 3 & 6
PLUG-U-15/U
15 1 2 3 4 5 6 7 8 9 10 11 12 13 14 16
U-15/U P-402
POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3
A20 SEE NOTE 9
PLUG PL-253-A
1 2 3 4 5 6 8 9 7 10 11 12 13 14 15 16 17 18
PL-153-A P-401
A20 SEE NOTE 9

9 THE "HIG
THE "LO
THAN T

8 INTERCO
RADIO
OF PLU
AN/AIC-
INTERPH
WIRE N
TRANSM
BOTTOM
EITHER
MICROPH

7 A CONT
INSTEAI

6 IDENTIF
BE ASS
CIRCUIT
SPECIFI

5 COAXIAI
BANDS,
ATTACH
MARKED
. T
PERMAN

4 THE BI
IS RVI

3 THE AI
POINT
CONNEC

2 WIRE
LARGEF
NO MA
WIRE T
AND T
OF ITS

1 INSTALL
MIL-W-

N/ARC-49—*Installation Cording Diagram*

WIRE TABLE I - SEE NOTE 2

WIRE NO.	CONDUCTED CURRENT AMPERES	MAX ALLOWABLE VOLTAGE DROP VOLTS	WIRE NO.	CONDUCTED CURRENT AMPERES	MAX. ALLOWABLE VOLTAGE DROP VOLTS
141A	3.5	TABLE II	179A	3.5	TABLE II
142A	3.5	TABLE II	181A	0.125	1
143A	3.5	TABLE II	182A	0.150	1
144A	3.5	TABLE II.	183A	0.186	1
145A	3.5	TABLE II	185A	8.5	TABLE II
146A	3.5	TABLE II	186A	0.250	1
147A	3.5	TABLE II	201A	3.5	TABLE II
148A	3.5	TABLE II	202A	3.5	TABLE II
149A	0.112	1	203A	3.5	TABLE II
151A	17.9	TABLE II	204A	3.5	TABLE II
152A	17.9	TABLE II	205A	2.4	1
161A	0.186	1	206A	3.5	TABLE II
162A	7.3	TABLE II	207A	3.5	TABLE II
163A	0.186	1	208A	3.5	TABLE II
171A	3.5	TABLE II	209A	3.5	TABLE II
172A	3.5	TABLE II	210A	0.325	1
173A	3.5	TABLE II	212A	0.25	1
174A	3.5	TABLE II	213A	9.4	TABLE II
175A	3.5	TABLE II	216A	0.202	1
176A	3.5	TABLE II	222A	0.202	1
177A	1.50	1	250A	0.08	1
178A	3.5	TABLE II	180A	9.4	TABLE II

WIRE TABLE II

CIRCUIT	MAX. ALLOWABLE VOLTAGE DROP VOLTS
151A + 185A + 171A + 162A + 152A	2.0
151A + 185A + 172A + 162A + 152A	2.0
151A + 185A + 173A + 162A + 152A	2.0
151A + 185A + 174A + 162A + 152A	2.0
151A + 185A + 175A + 162A + 152A	2.0
151A + 185A + 176A + 162A + 152A	2.0
151A + 185A + 178A + 162A + 152A	2.0
151A + 185A + 179A + 162A + 152A	2.0
151A + 213A + 201A + 141A + 162A + 152A	2.0
151A + 213A + 202A + 142A + 162A + 152A	2.0
151A + 213A + 203A + 143A + 162A + 152A	2.0
151A + 213A + 204A + 144A + 162A + 152A	2.0
151A + 213A + 206A + 145A + 162A + 152A	2.0
151A + 213A + 207A + 146A + 162A + 152A	2.0
151A + 213A + 208A + 147A + 162A + 152A	2.0
151A + 213A + 209A + 148A + 162A + 152A	2.0
213A + 180A	1.0

9 THE "HIGH" CONNECTION SHALL BE USED WHEN USING ONE HEADSET AND THE "LOW" CONNECTION SHALL BE USED FOR TWO AND NOT MORE THAN TWELVE HEADSETS.

8 INTERCOMMUNICATION SET AN/AIC-10 MAY BE USED WITH RADIO SET AN/ARC-49. CONNECT WIRE RV211A20 TO PIN 4 OF PLUG PL-151-A ON RADIO TRANSMITTER T-452/ARC-49 FOR AN/AIC-10 INTERPHONE USING A DYNAMIC MICROPHONE. FOR INTERPHONE SYSTEMS USING A CARBON MICROPHONE CONNECT WIRE NO. RV211A20 TO PIN 11 OF PLUG U-15/U ON RADIO TRANSMITTER T-452/ARC-49. A SWITCH IS LOCATED ON THE BOTTOM OF RADIO TRANSMITTER T-452/ARC-49 TO SELECT EITHER INTERCOMMUNICATION SET AN/AIC-10 OR CARBON MICROPHONE INPUT.

7 A CONTRACTOR FURNISHED ANTENNA MAY BE INSTALLED INSTEAD OF ANTENNA MAST AN-104-B.

6 IDENTIFICATION CODING FOR PANEL LIGHT WIRES SHALL BE ASSIGNED BY THE AIRCRAFT CONTRACTOR USING CIRCUIT FUNCTION LETTER "L" IN ACCORDANCE WITH SPECIFICATION MIL-W-5088.

5 COAXIALS CABLES SHALL BE IDENTIFIED BY NONMETALLIC BANDS, SLEEVES, OR OTHER SUITABLE CABLE MARKERS, ATTACHED ONE INCH FROM EACH CABLE PLUG, AND MARKED EXACTLY AS INDICATED AT RESPECTIVE SYMBOLS ▭. THE CHARACTERS SHALL BE LEGIBLE AND OF A PERMANENT NATURE.

4 THE BLOCK OF NUMBERS ASSIGNED TO RADIO SET AN/ARC-49 IS RV100 THRU RV269. THE HIGHEST NUMBER USED IS RV253A.

3 THE AIRCRAFT CONTRACTOR SHALL INDICATE TO WHICH POINT ON ELECTRICAL SYSTEM WIRING DIAGRAM THIS CONNECTION IS MADE.

2 WIRE SIZES SHOWN ARE MINIMUM SIZES ONLY AND LARGER WIRES CAN BE USED AS REQUIRED. WHERE NO MAXIMUM ALLOWABLE VOLTAGE DROP IS SHOWN IN WIRE TABLE I OR II, THE VOLTAGE DROP IS NOT CRITICAL AND THE SIZE WIRE SHOWN MAY BE USE REGARDLESS OF ITS LENGTH.

1 INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATION MIL-W-5088.

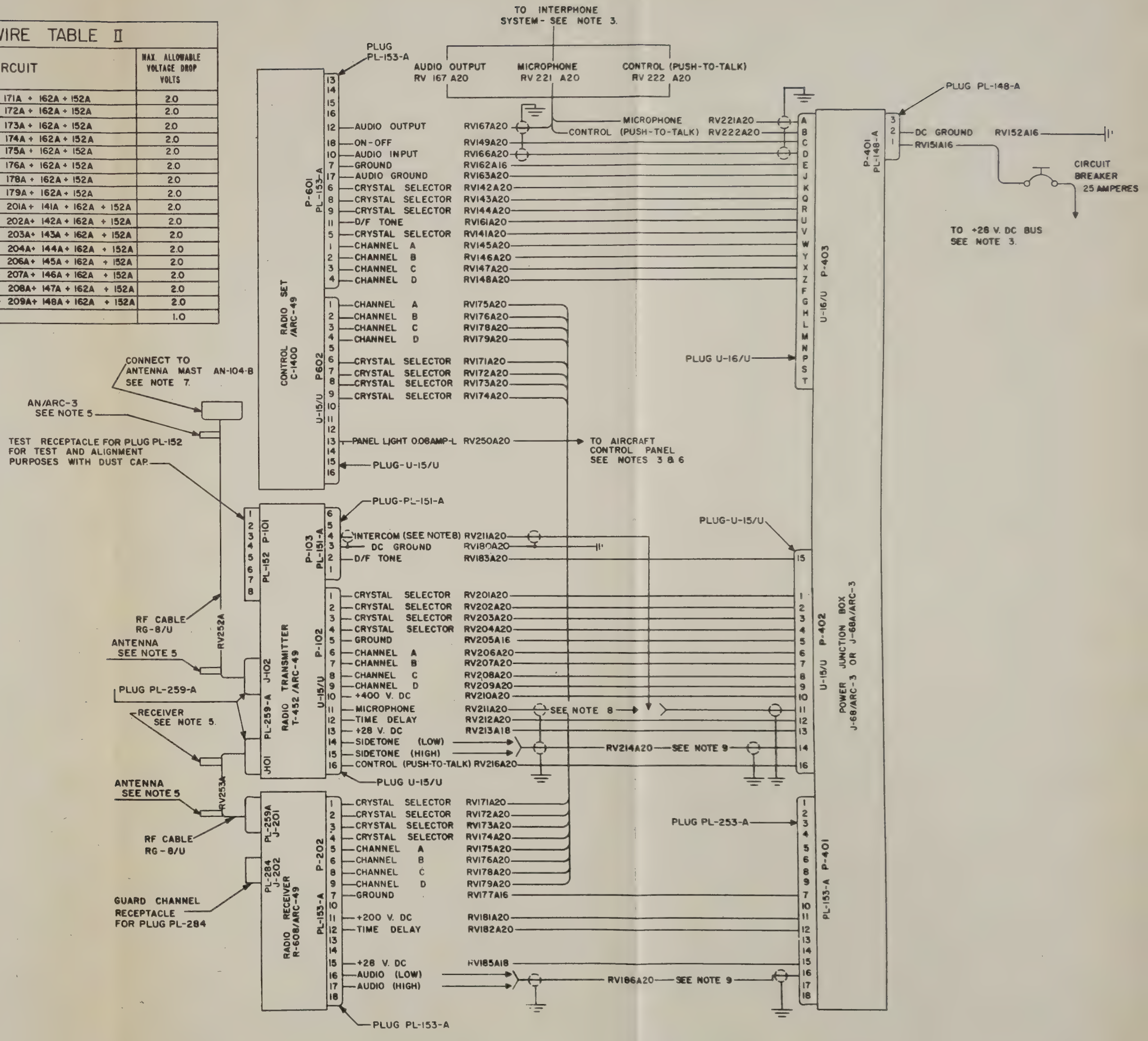
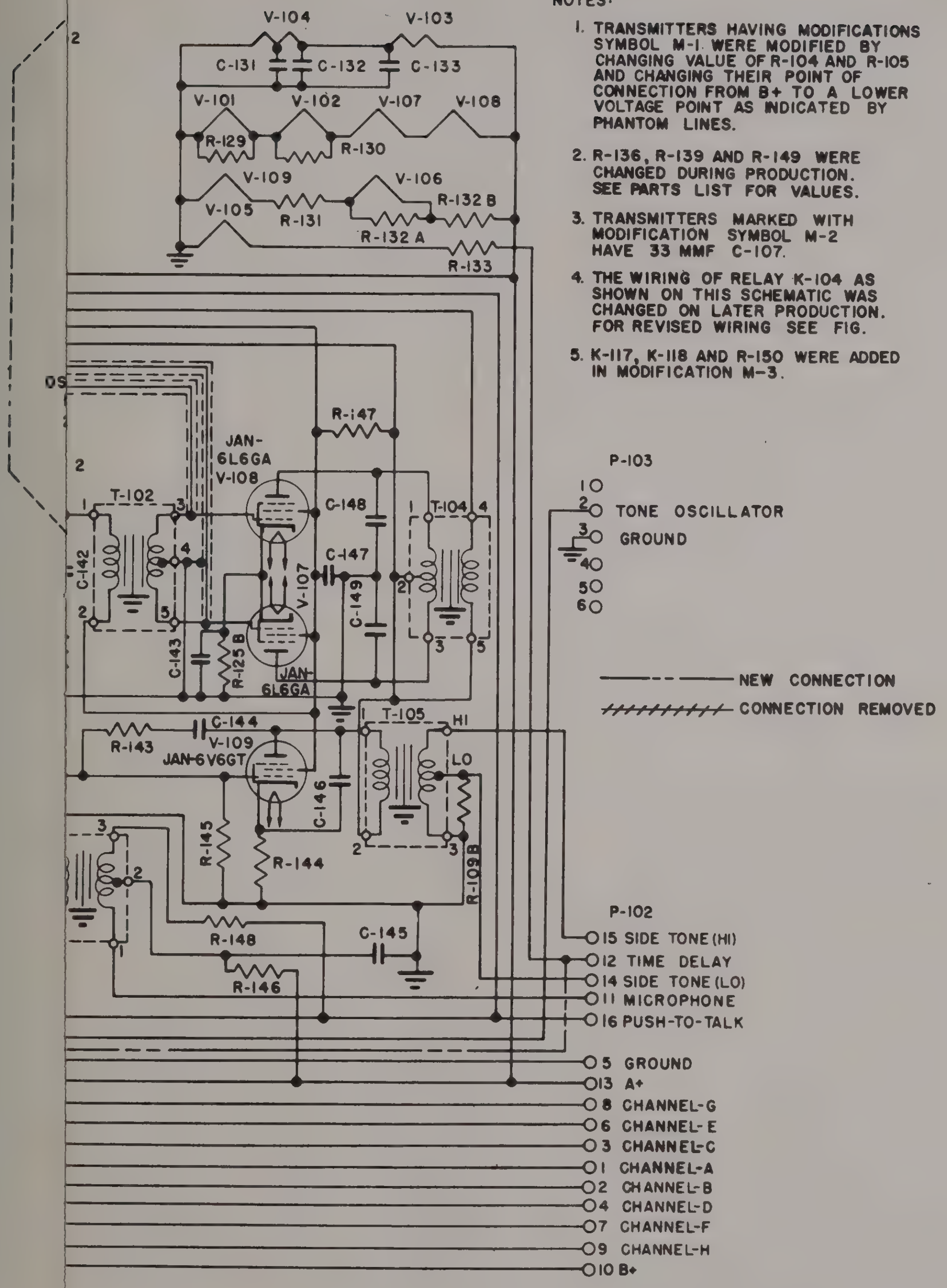

TO INTERPHONE SYSTEM - SEE NOTE 3.
AUDIO OUTPUT RV 167 A20
MICROPHONE RV 221 A20
CONTROL (PUSH-TO-TALK) RV 222 A20
PLUG PL-153-A
CONTROL RADIO SET C-1400 /ARC-49
P-601 PL-153-A
12 AUDIO OUTPUT RV167A20
18 ON-OFF RV149A20
10 AUDIO INPUT RV166A20
7 GROUND RV162A16
17 AUDIO GROUND RV163A20
6 CRYSTAL SELECTOR RV142A20
8 CRYSTAL SELECTOR RV143A20
9 CRYSTAL SELECTOR RV144A20
11 D/F TONE RV161A20
5 CRYSTAL SELECTOR RV141A20
1 CHANNEL A RV145A20
2 CHANNEL B RV146A20
3 CHANNEL C RV147A20
4 CHANNEL D RV148A20
MICROPHONE RV221A20
CONTROL (PUSH-TO-TALK) RV222A20
U-15/U P602
1 CHANNEL A RV175A20
2 CHANNEL B RV176A20
3 CHANNEL C RV178A20
4 CHANNEL D RV179A20
6 CRYSTAL SELECTOR RV171A20
7 CRYSTAL SELECTOR RV172A20
8 CRYSTAL SELECTOR RV173A20
9 CRYSTAL SELECTOR RV174A20
13 PANEL LIGHT 0.08AMP-L RV250A20
TO AIRCRAFT CONTROL PANEL SEE NOTES 3 & 6
PLUG-U-15/U
CONNECT TO ANTENNA MAST AN-104-B SEE NOTE 7.
AN/ARC-3 SEE NOTE 5
TEST RECEPTACLE FOR PLUG PL-152 FOR TEST AND ALIGNMENT PURPOSES WITH DUST CAP.
PLUG-PL-151-A
PL-152 P-101
P-103 PL-151-A
4 INTERCOM (SEE NOTE 8) RV211A20
3 DC GROUND RV180A20
2 D/F TONE RV183A20
RF CABLE RG-8/U
RV252A
ANTENNA SEE NOTE 5
PLUG PL-259-A
RECEIVER SEE NOTE 5.
J-102
PL-259-A
JHO1
RADIO TRANSMITTER T-452 /ARC-49
U-15/U P-102
1 CRYSTAL SELECTOR RV201A20
2 CRYSTAL SELECTOR RV202A20
3 CRYSTAL SELECTOR RV203A20
4 CRYSTAL SELECTOR RV204A20
5 GROUND RV205A16
6 CHANNEL A RV206A20
7 CHANNEL B RV207A20
8 CHANNEL C RV208A20
9 CHANNEL D RV209A20
10 +400 V. DC RV210A20
11 MICROPHONE RV211A20
SEE NOTE 8
12 TIME DELAY RV212A20
13 +28 V. DC RV213A18
14 SIDETONE (LOW)
15 SIDETONE (HIGH)
RV214A20 SEE NOTE 9
16 CONTROL (PUSH-TO-TALK) RV216A20
PLUG U-15/U
ANTENNA SEE NOTE 5
RV253A
RF CABLE RG-8/U
PL-259A J-201
PL-284 J-202
GUARD CHANNEL RECEPTACLE FOR PLUG PL-284
RADIO RECEIVER R-608/ARC-49
PL-153-A P-202
1 CRYSTAL SELECTOR RV171A20
2 CRYSTAL SELECTOR RV172A20
3 CRYSTAL SELECTOR RV173A20
4 CRYSTAL SELECTOR RV174A20
5 CHANNEL A RV175A20
6 CHANNEL B RV176A20
8 CHANNEL C RV178A20
9 CHANNEL D RV179A20
7 GROUND RV177A16
11 +200 V. DC RV181A20
12 TIME DELAY RV182A20
15 +28 V. DC RV185A18
16 AUDIO (LOW)
17 AUDIO (HIGH)
RV186A20 SEE NOTE 9
PLUG PL-153-A
PLUG U-16/U
U-16/U P-403
PLUG-U-15/U
U-15/U P-402
PLUG PL-253-A
PL-153-A P-401
POWER JUNCTION BOX J-68/ARC-3 OR J-68A/ARC-3
PLUG PL-148-A
P-401 PL-148-A
2 DC GROUND RV152A16
1 RV151A16
CIRCUIT BREAKER 25 AMPERES
TO +28 V. DC BUS SEE NOTE 3.

Figure 8-20. Radio Set AN/ARC-49—Installation Cording Diagram

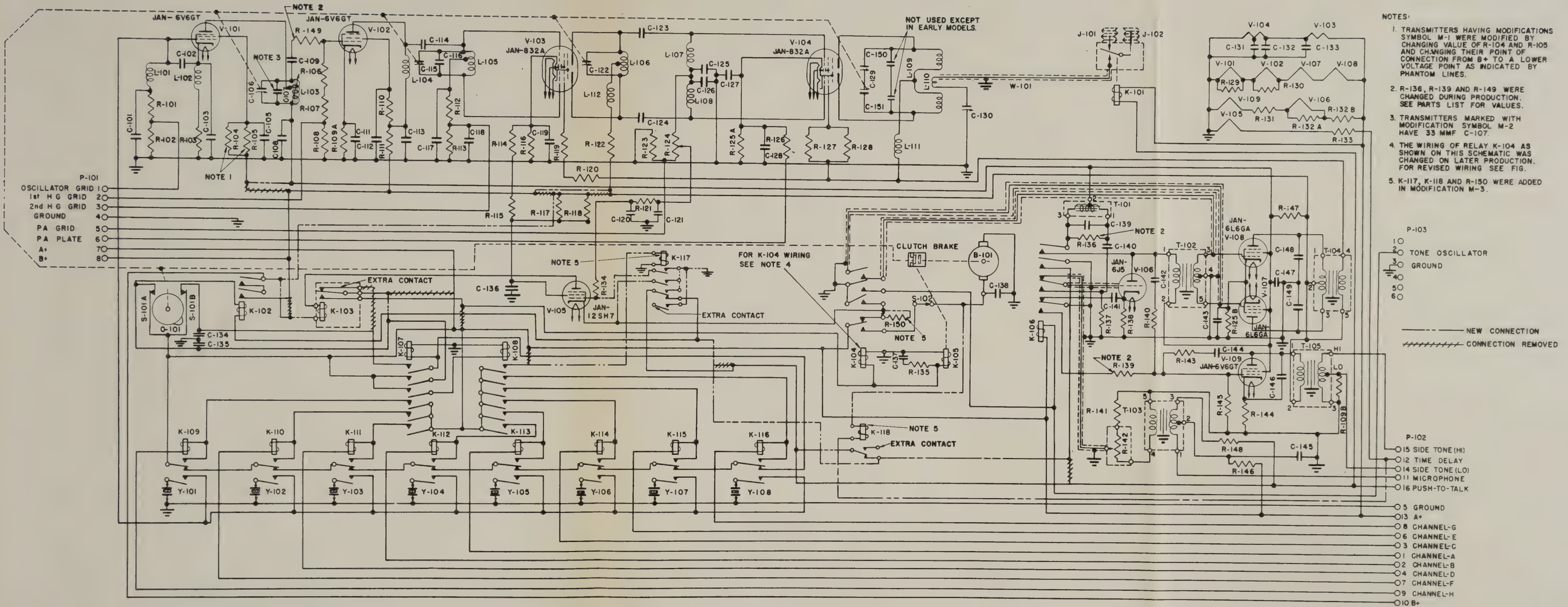


V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
R-132 B
V-105
R-131
R-132 A
R-133
OS
R-147
JAN-6L6GA V-108
T-102
C-148
T-104
C-147
C-142
V-107
C-149
C-143
R-125 B
JAN-6L6GA
R-143
C-144
V-109 JAN-6V6GT
T-105
HI
LO
C-146
R-145
R-144
R-109B
R-148
C-145
R-146
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
NEW CONNECTION
CONNECTION REMOVED
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+

NOTES:

1. TRANSMITTERS HAVING MODIFICATIONS SYMBOL M-1 WERE MODIFIED BY CHANGING VALUE OF R-104 AND R-105 AND CHANGING THEIR POINT OF CONNECTION FROM B+ TO A LOWER VOLTAGE POINT AS INDICATED BY PHANTOM LINES.
2. R-136, R-139 AND R-149 WERE CHANGED DURING PRODUCTION. SEE PARTS LIST FOR VALUES.
3. TRANSMITTERS MARKED WITH MODIFICATION SYMBOL M-2 HAVE 33 MMF C-107.
4. THE WIRING OF RELAY K-104 AS SHOWN ON THIS SCHEMATIC WAS CHANGED ON LATER PRODUCTION. FOR REVISED WIRING SEE FIG.
5. K-117, K-118 AND R-150 WERE ADDED IN MODIFICATION M-3.

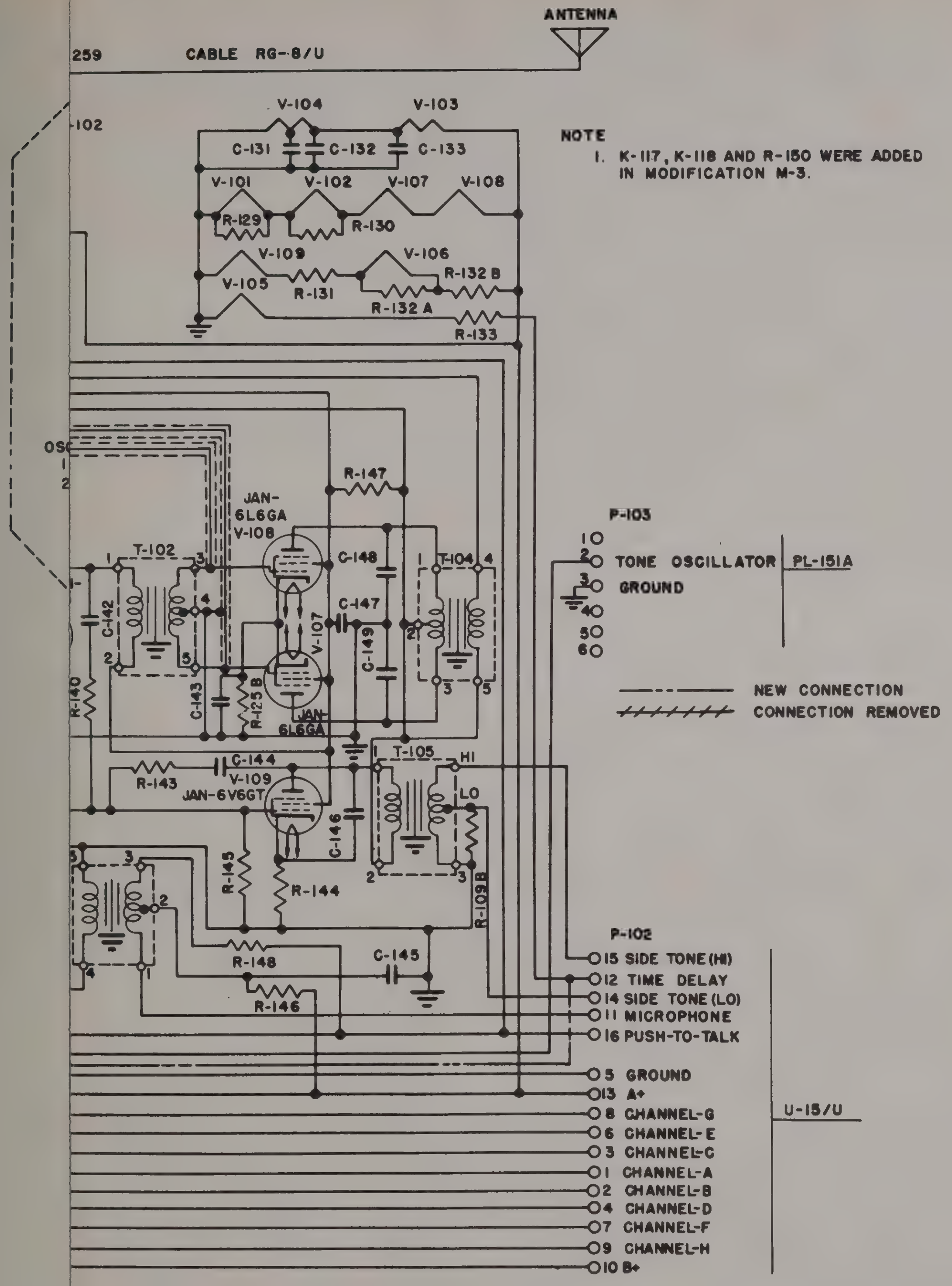
1. Radio Transmitter T-67/ARC-3—Schematic Diagram Showing Early Production Wiring of K-104 and Modification M-1, M-2 and M-3


JAN-6V6GT
V-101
NOTE 2
R-149
JAN-6V6GT
V-102
C-114
C-116
L-105
V-103
JAN-832A
C-123
L-106
L-107
C-125
V-104
JAN-832A
NOT USED EXCEPT IN EARLY MODELS.
C-150
C-129
C-151
L-109
L-110
W-101
C-130
L-111
J-101
J-102
K-101
C-102
L-101
L-102
NOTE 3
C-109
R-106
L-103
R-107
L-104
C-115
C-122
L-112
C-126
L-108
C-127
C-124
R-101
C-101
R-102
R-103
C-103
R-104
R-105
C-105
C-106
C-107
C-108
NOTE 1
R-108
R-109A
C-111
C-112
R-110
R-111
C-113
C-117
R-112
R-113
C-118
R-114
R-116
C-119
R-119
R-122
R-120
R-123
R-124
R-125A
R-126
C-128
R-127
R-128
P-101
OSCILLATOR GRID 1
1st H G GRID 2
2nd H G GRID 3
GROUND 4
PA GRID 5
PA PLATE 6
A+ 7
B+ 8
R-115
R-117
R-118
R-121
C-120
C-121
NOTE 5
K-117
C-136
V-105
JAN-12SH7
R-134
EXTRA CONTACT
S-101A
S-101B
O-101
K-102
K-103
C-134
C-135
FOR K-104 WIRING SEE NOTE 4
CLUTCH BRAKE
B-101
C-138
S-102
R-150
NOTE 5
K-104
C-137
R-135
K-105
K-106
K-107
K-108
K-118
NOTE 5
EXTRA CONTACT
K-109
K-110
K-111
K-112
K-113
K-114
K-115
K-116
Y-101
Y-102
Y-103
Y-104
Y-105
Y-106
Y-107
Y-108
T-101
C-139
NOTE 2
R-136
C-140
JAN-6J5
V-106
C-141
R-137
R-138
R-140
C-142
T-102
JAN-6L6GA
V-108
R-147
C-148
C-147
V-107
C-149
T-104
C-143
R-125B
JAN-6L6GA
NOTE 2
R-139
R-143
C-144
V-109
JAN-6V6GT
T-105
HI
LO
C-146
R-145
R-144
R-109B
R-141
T-103
R-142
R-148
R-146
C-145
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
R-132 B
V-105
R-131
R-132 A
R-133
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
NEW CONNECTION
CONNECTION REMOVED
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+

NOTES:

1. TRANSMITTERS HAVING MODIFICATIONS SYMBOL M-1 WERE MODIFIED BY CHANGING VALUE OF R-104 AND R-105 AND CHANGING THEIR POINT OF CONNECTION FROM B+ TO A LOWER VOLTAGE POINT AS INDICATED BY PHANTOM LINES.
2. R-136, R-139 AND R-149 WERE CHANGED DURING PRODUCTION. SEE PARTS LIST FOR VALUES.
3. TRANSMITTERS MARKED WITH MODIFICATION SYMBOL M-2 HAVE 33 MMF C-107.
4. THE WIRING OF RELAY K-104 AS SHOWN ON THIS SCHEMATIC WAS CHANGED ON LATER PRODUCTION. FOR REVISED WIRING SEE FIG.
5. K-117, K-118 AND R-150 WERE ADDED IN MODIFICATION M-3.

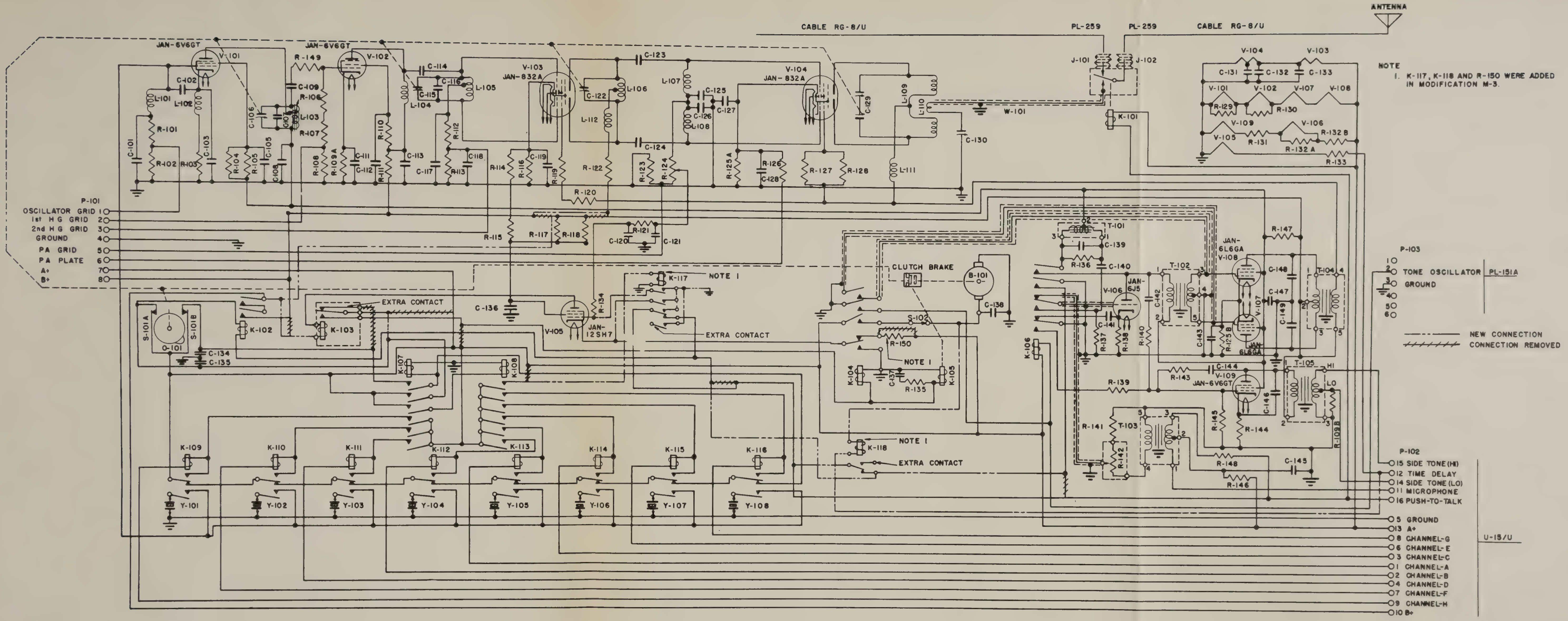
Figure 8-21. Radio Transmitter T-67/ARC-3—Schematic Diagram Showing Early Production Wiring of K-104 and Modification M-1, M-2 and M-3


ANTENNA
259
CABLE RG-8/U
-102
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
R-132 B
V-105
R-131
R-132 A
R-133
OSC
1
2
R-147
JAN-6L6GA
V-108
T-102
C-148
T-104
C-142
C-147
V-107
C-149
R-140
C-143
R-125 B
JAN-6L6GA
T-105
HI
LO
C-144
R-143
V-109
JAN-6V6GT
C-146
R-145
R-144
R-109B
R-148
C-145
R-146
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
PL-151A
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+
U-15/U

NOTE
1. K-117, K-118 AND R-150 WERE ADDED IN MODIFICATION M-3.

— - — - — NEW CONNECTION
-/-/-/-/-/- CONNECTION REMOVED

Radio Transmitter T-67/ARC-3—Schematic Diagram Showing Later Production Wiring of K-104 and Modification M-1 and M-3

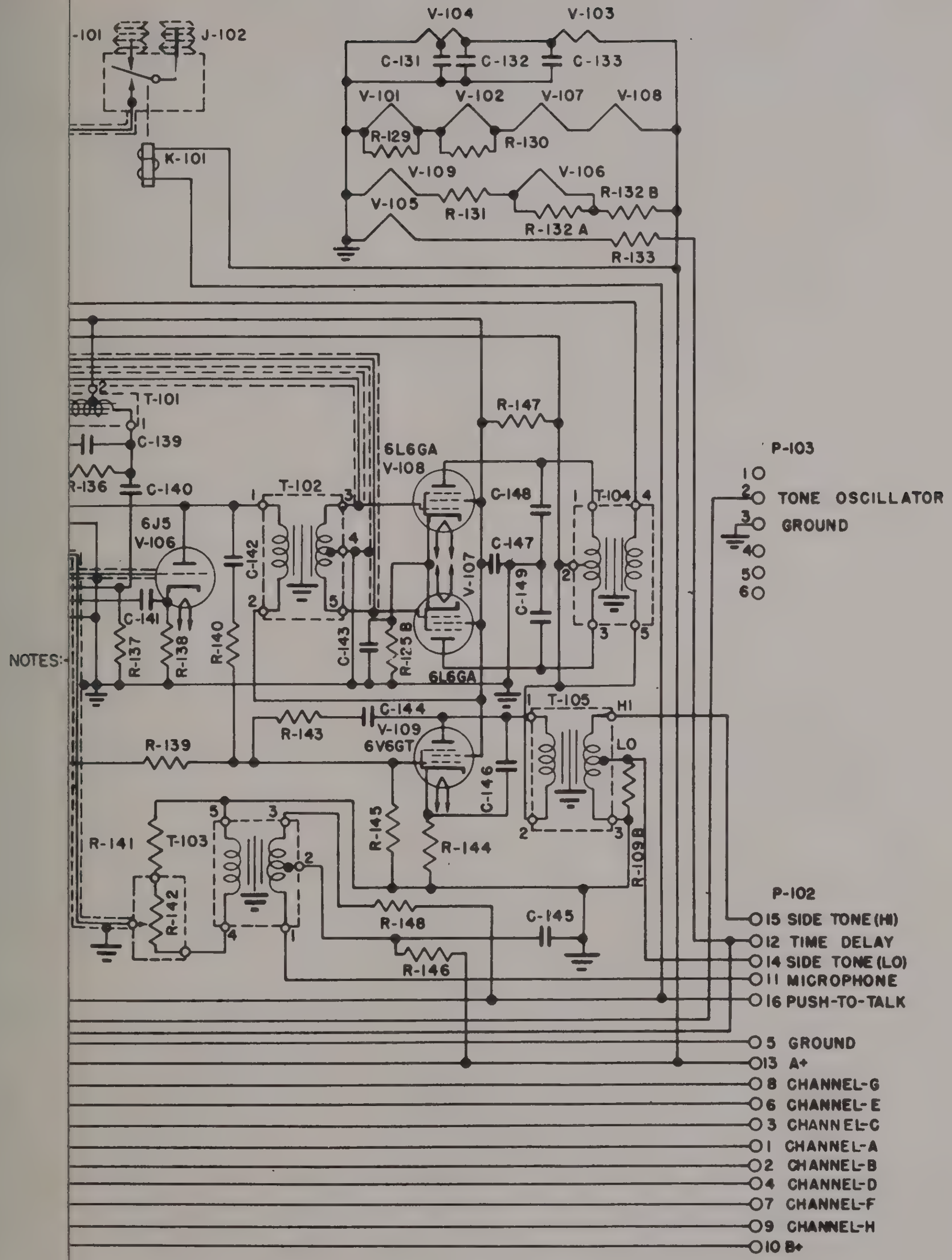

ANTENNA
CABLE RG-8/U
PL-259
PL-259
CABLE RG-8/U
J-101
J-102
K-101
W-101
JAN-6V6GT V-101
JAN-6V6GT V-102
V-103 JAN-832A
V-104 JAN-832A
R-149
C-102
L-101
L-102
R-101
R-102
R-103
C-101
C-103
C-106
C-109
R-106
L-103
R-107
R-104
R-105
C-105
C-108
R-108
R-109A
C-111
C-112
R-110
R-111
C-113
C-114
C-115
C-116
L-104
L-105
R-112
R-113
C-117
C-118
C-122
C-123
C-124
L-106
L-112
L-107
C-125
C-126
C-127
L-108
C-129
L-109
L-110
L-111
C-130
R-114
R-116
C-119
R-119
R-122
R-123
R-124
R-125A
R-126
C-128
R-127
R-128
R-120
R-115
R-117
R-118
R-121
C-120
C-121
P-101
OSCILLATOR GRID 1
1st H G GRID 2
2nd H G GRID 3
GROUND 4
PA GRID 5
PA PLATE 6
A+ 7
B+ 8
K-117
NOTE 1
EXTRA CONTACT
EXTRA CONTACT
K-102
K-103
C-136
V-105 JAN-12SH7
R-134
S-101A
S-101B
O-101
C-134
C-135
K-107
K-108
CLUTCH BRAKE
B-101
C-138
S-102
R-150
NOTE 1
K-104
C-137
R-135
K-105
K-106
K-109
K-110
K-111
K-112
K-113
K-114
K-115
K-116
Y-101
Y-102
Y-103
Y-104
Y-105
Y-106
Y-107
Y-108
NOTE 1
K-118
EXTRA CONTACT
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
V-105
R-131
R-132 B
R-132 A
R-133
T-101
C-139
R-136
C-140
JAN-6J5
V-106
C-141
R-137
R-138
R-140
C-142
T-102
C-143
R-125 B
JAN-6L6GA V-108
C-148
R-147
C-147
V-107
C-149
T-104
JAN-6L6GA
R-139
R-143
C-144
V-109 JAN-6V6GT
C-146
T-105
HI
LO
R-145
R-144
R-109 B
R-141
T-103
R-142
R-148
R-146
C-145
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
PL-151A
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+
U-15/U

NOTE
1. K-117, K-118 AND R-150 WERE ADDED IN MODIFICATION M-3.

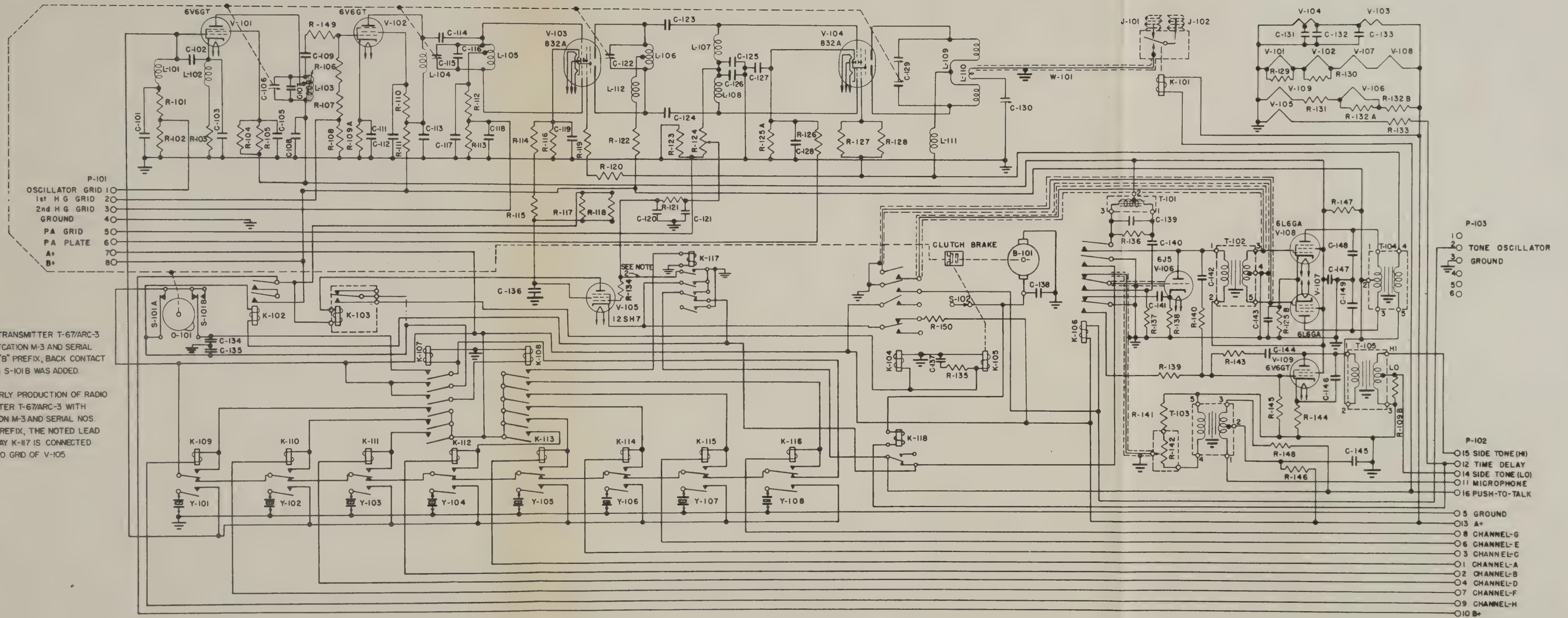
NEW CONNECTION

CONNECTION REMOVED

Figure 8-22. Radio Transmitter T-67/ARC-3—Schematic Diagram Showing Later Production Wiring of K-104 and Modification M-1 and M-3


V-104
V-103
-101
J-102
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
K-101
V-109
V-106
R-132 B
V-105
R-131
R-132 A
R-133
T-101
R-147
C-139
R-136
C-140
6L6GA
V-108
P-103
T-102
C-148
T-104
6J5
V-106
C-142
C-147
V-107
C-149
C-141
R-137
R-138
R-140
C-143
R-125 B
6L6GA
NOTES:-
C-144
T-105
HI
R-143
V-109
6V6GT
LO
R-139
C-146
R-141
T-103
R-145
R-144
R-142
R-109 B
P-102
R-148
C-145
R-146
1 ○
2 ○ TONE OSCILLATOR
3 ○ GROUND
4 ○
5 ○
6 ○
○ 15 SIDE TONE (HI)
○ 12 TIME DELAY
○ 14 SIDE TONE (LO)
○ 11 MICROPHONE
○ 16 PUSH-TO-TALK
○ 5 GROUND
○ 13 A+
○ 8 CHANNEL-G
○ 6 CHANNEL-E
○ 3 CHANNEL-C
○ 1 CHANNEL-A
○ 2 CHANNEL-B
○ 4 CHANNEL-D
○ 7 CHANNEL-F
○ 9 CHANNEL-H
○ 10 B+

. Radio Transmitter T-67/ARC-3—Schematic Diagram Showing Modifications M-1, M-2 and M-3 (With Note Applicable to Transmitters with Serial Number Prefix "B")


6V6GT
V-101
6V6GT
V-102
R-149
C-114
C-115
C-116
L-105
C-102
C-109
R-106
L-101
L-102
L-103
L-104
C-106
C-107
R-107
R-101
C-101
R-102
R-103
C-103
R-104
R-105
C-105
C-108
R-108
R-109A
C-111
C-112
R-110
R-111
C-113
C-117
R-112
R-113
C-118
V-103
832A
C-122
L-106
L-112
C-123
C-124
R-114
R-116
C-119
R-119
R-122
R-120
L-107
C-125
C-126
C-127
L-108
R-123
R-124
R-125A
R-126
C-128
V-104
832A
C-129
L-109
L-110
L-111
C-130
R-127
R-128
W-101
J-101
J-102
K-101
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
V-105
R-131
R-132 B
R-132 A
R-133
P-101
OSCILLATOR GRID 1
1st H G GRID 2
2nd H G GRID 3
GROUND 4
PA GRID 5
PA PLATE 6
A+ 7
B+ 8
R-115
R-117
R-118
R-121
C-120
C-121
T-101
C-139
R-136
C-140
R-147
6L6GA
V-108
T-102
C-148
C-147
T-104
V-107
C-149
6L6GA
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
CLUTCH BRAKE
B-101
C-138
6J5
V-106
C-142
C-143
R-125B
C-141
R-137
R-138
R-140
K-117
SEE NOTE
R-134
V-105
12SH7
C-136
S-101A
S-101B
O-101
K-102
K-103
C-134
C-135
S-102
R-150
K-104
C-137
R-135
K-105
K-106
R-139
R-143
C-144
V-109
6V6GT
T-105
HI
LO
C-146
R-145
R-144
R-109B
R-141
T-103
R-142
R-148
R-146
C-145
K-107
K-108
K-112
K-113
K-109
K-110
K-111
K-114
K-115
K-116
K-118
Y-101
Y-102
Y-103
Y-104
Y-105
Y-106
Y-107
Y-108
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+

NOTES:-

1. ON RADIO TRANSMITTER T-67/ARC-3 WITH MODIFCATION M-3 AND SERIAL NOS. WITH "B" PREFIX, BACK CONTACT ON SWITCH S-101B WAS ADDED.
2. DURING EARLY PRODUCTION OF RADIO TRANSMITTER T-67/ARC-3 WITH MODIFICATION M-3 AND SERIAL NOS. WITH "B" PREFIX, THE NOTED LEAD FROM RELAY K-117 IS CONNECTED DIRECTLY TO GRID OF V-105

Figure 8-23. Radio Transmitter T-67/ARC-3—Schematic Diagram Showing Modifications M-1, M-2 and M-3 (With Note Applicable to Transmitters with Serial Number Prefix "B")

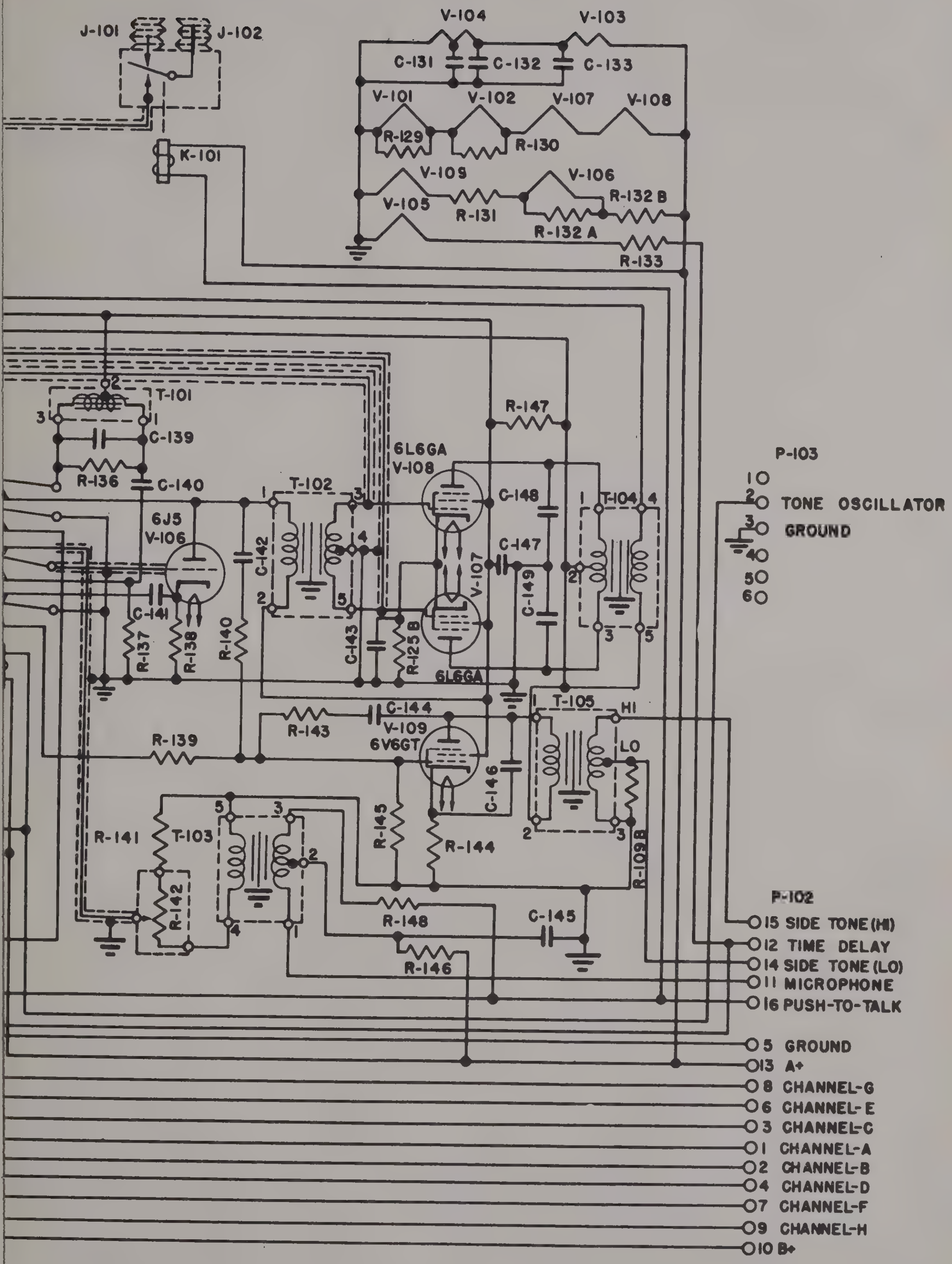

J-101
J-102
K-101
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
R-132 B
V-105
R-131
R-132 A
R-133
T-101
C-139
R-136
C-140
6J5
V-106
T-102
6L6GA
V-108
R-147
C-148
T-104
C-147
C-149
V-107
C-142
C-141
R-137
R-138
R-140
C-143
R-125 B
6L6GA
T-105
HI
LO
C-144
V-109
6V6GT
R-143
R-139
C-146
R-141
T-103
R-142
R-145
R-144
R-109 B
R-148
C-145
R-146
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+

Figure 8-24. Radio Transmitter T-67A/ARC-3—Schematic Diagram

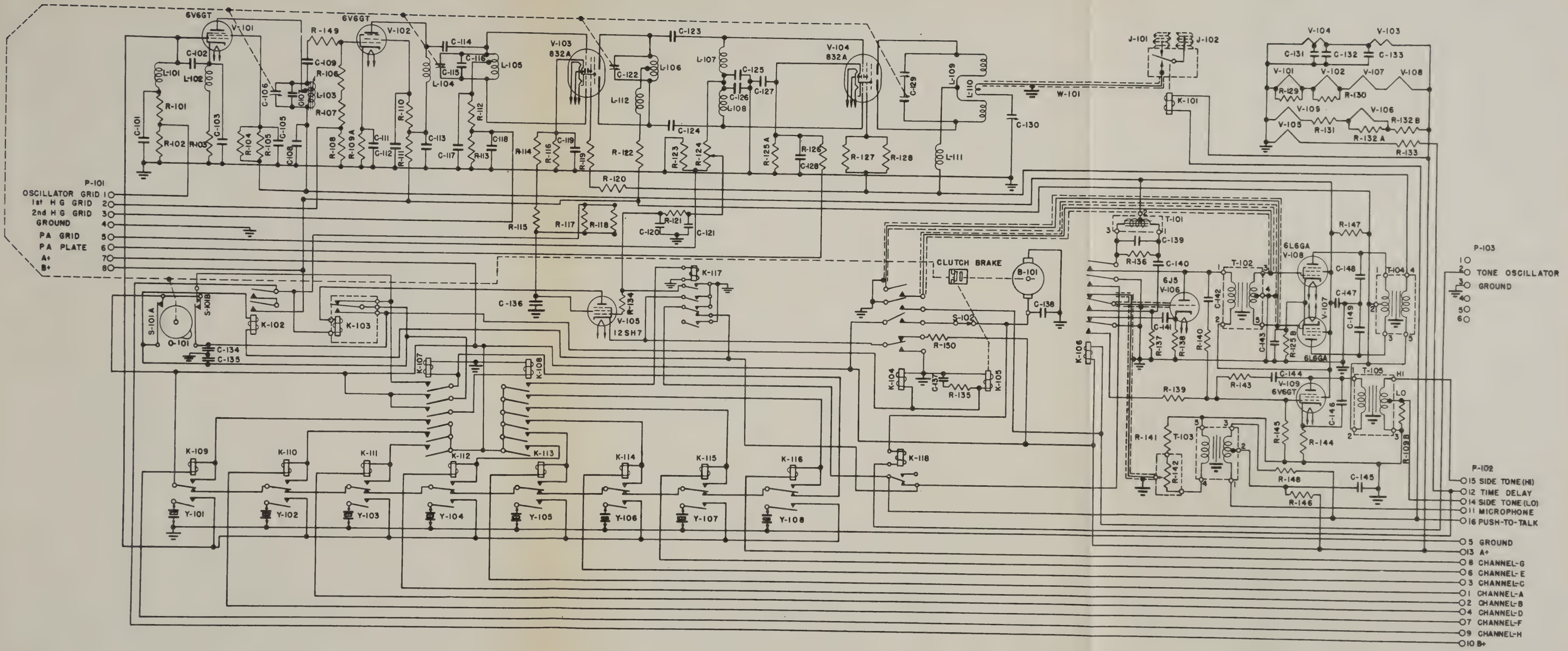

6V6GT
V-101
V-102
V-103
832A
V-104
832A
V-105
12SH7
6J5
V-106
6L6GA
V-107
V-108
V-109
6V6GT
C-101
C-102
C-103
C-105
C-106
C-107
C-108
C-109
C-111
C-112
C-113
C-114
C-115
C-116
C-117
C-118
C-119
C-120
C-121
C-122
C-123
C-124
C-125
C-126
C-127
C-128
C-129
C-130
C-131
C-132
C-133
C-134
C-135
C-136
C-137
C-138
C-139
C-140
C-141
C-142
C-143
C-144
C-145
C-146
C-147
C-148
C-149
L-101
L-102
L-103
L-104
L-105
L-106
L-107
L-108
L-109
L-110
L-111
L-112
R-101
R-102
R-103
R-104
R-105
R-106
R-107
R-108
R-109A
R-109B
R-110
R-111
R-112
R-113
R-114
R-115
R-116
R-117
R-118
R-119
R-120
R-121
R-122
R-123
R-124
R-125A
R-125B
R-126
R-127
R-128
R-129
R-130
R-131
R-132A
R-132B
R-133
R-134
R-135
R-136
R-137
R-138
R-139
R-140
R-141
R-142
R-143
R-144
R-145
R-146
R-147
R-148
R-149
R-150
T-101
T-102
T-103
T-104
T-105
HI
LO
J-101
J-102
W-101
K-101
K-102
K-103
K-104
K-105
K-106
K-107
K-108
K-109
K-110
K-111
K-112
K-113
K-114
K-115
K-116
K-117
K-118
Y-101
Y-102
Y-103
Y-104
Y-105
Y-106
Y-107
Y-108
S-101A
S-101B
S-102
O-101
B-101
CLUTCH BRAKE
P-101
OSCILLATOR GRID 1
1st H G GRID 2
2nd H G GRID 3
GROUND 4
PA GRID 5
PA PLATE 6
A+ 7
B+ 8
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+

Figure 8-24. Radio Transmitter T-67A/ARC-3—Schematic Diagram

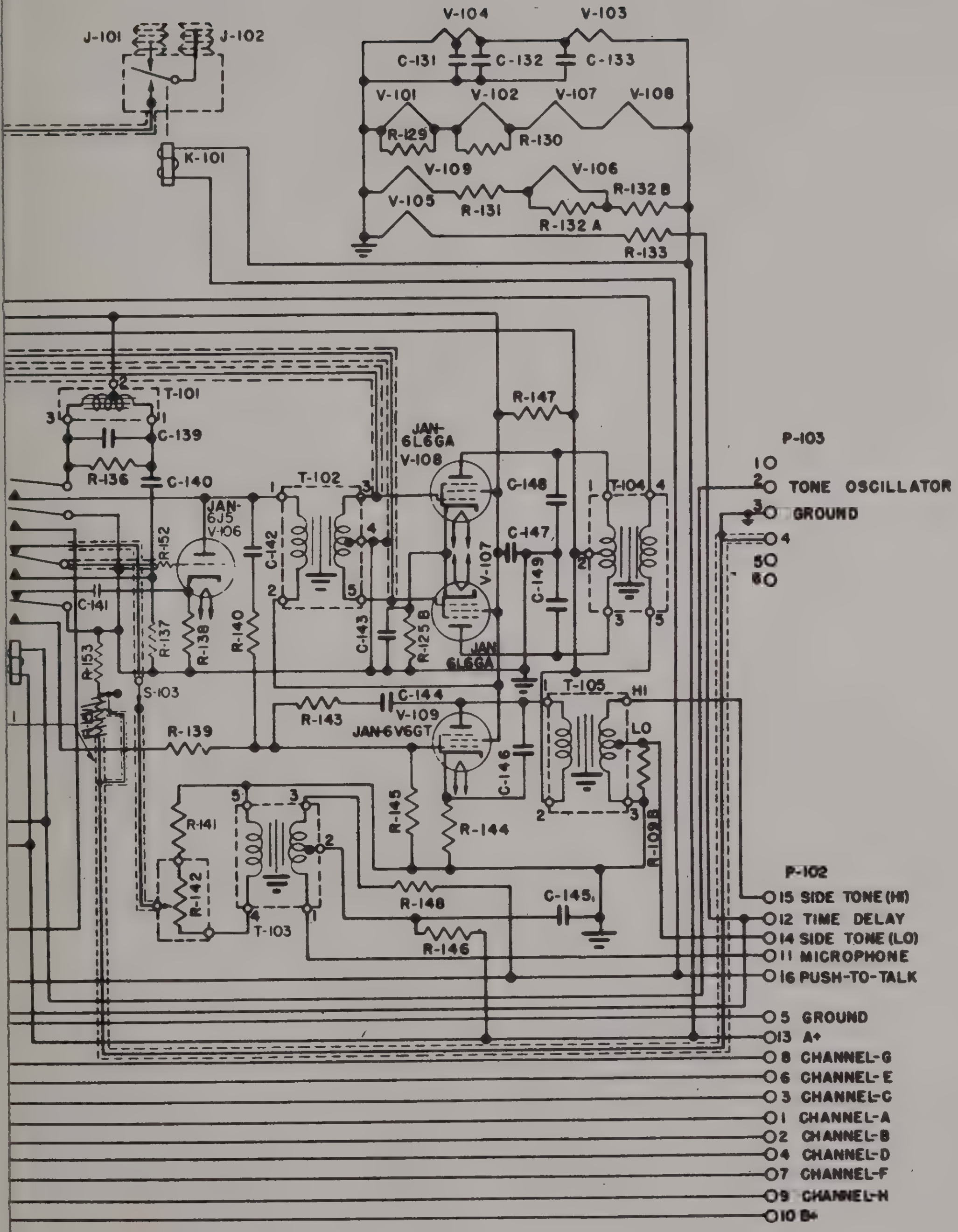
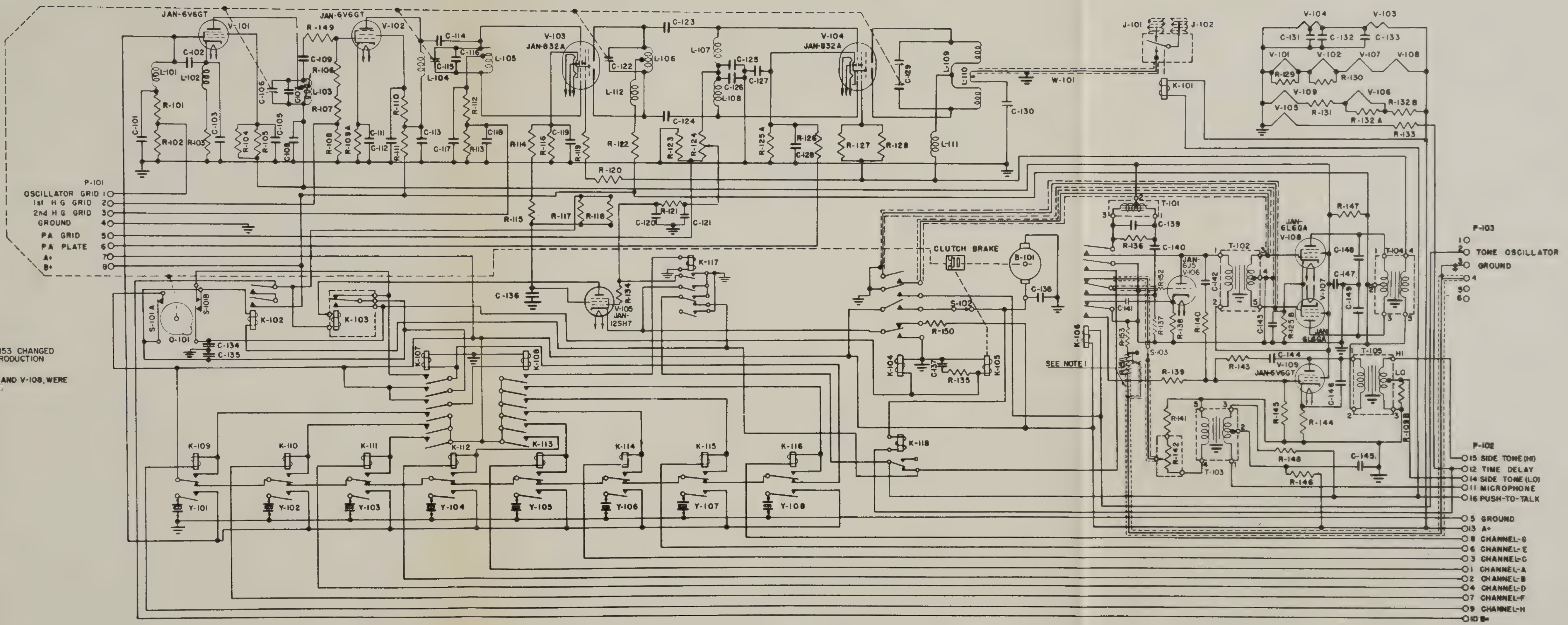

J-101
J-102
K-101
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
R-132 B
V-105
R-131
R-132 A
R-133
T-101
C-139
R-136
C-140
JAN-6J5
V-106
R-152
C-141
R-137
R-138
R-140
C-142
T-102
C-143
R-125 B
JAN-6L6GA
V-108
V-107
JAN 6L6GA
R-147
C-148
C-147
C-149
T-104
R-153
S-103
R-139
R-143
C-144
V-109
JAN-6V6GT
C-146
T-105
HI
LO
R-109 B
R-141
R-142
T-103
R-145
R-144
R-148
R-146
C-145
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B+

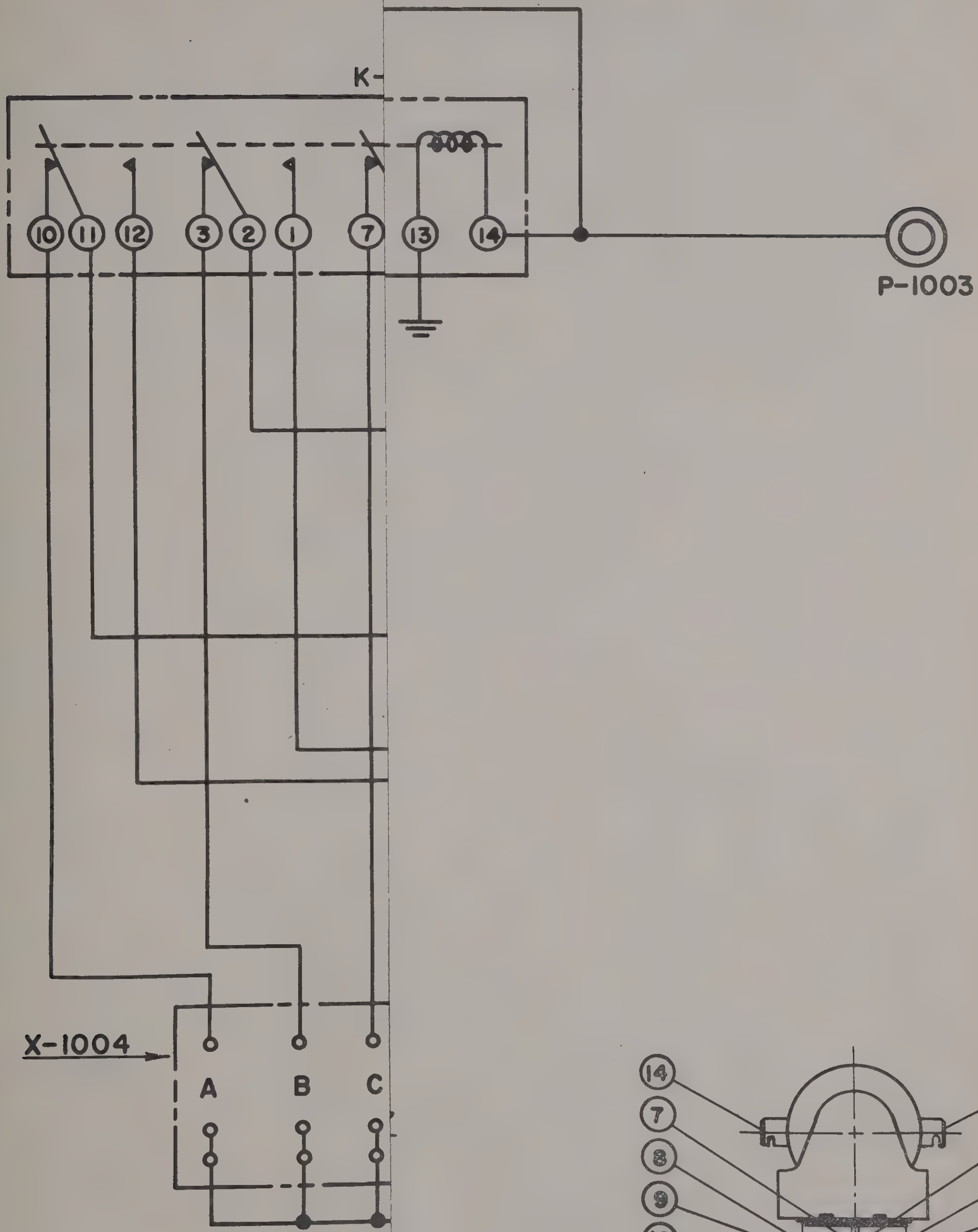
Figure 8-25. Radio Transmitter T-67B/ARC-3—Schematic Diagram

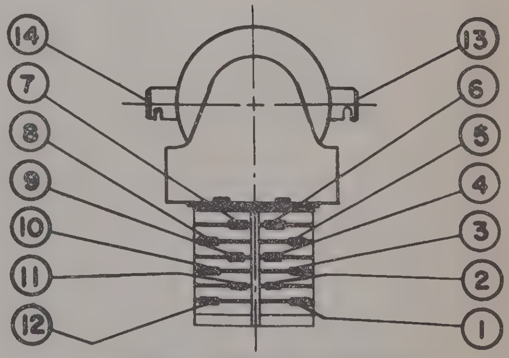

JAN-6V6GT
V-101
JAN-6V6GT
V-102
V-103
JAN-832A
V-104
JAN-832A
R-149
C-102
L-101
L-102
R-101
C-101
R-102
R-103
C-103
C-106
C-109
R-108
L-103
R-107
C-105
R-104
R-105
C-108
R-106
R-109A
C-111
C-112
R-110
R-111
C-113
C-114
C-115
C-116
L-104
L-105
R-112
C-117
R-113
C-118
R-114
R-116
C-119
R-119
C-122
L-106
L-112
C-123
C-124
R-122
R-120
R-123
R-124
L-107
C-125
C-126
C-127
L-108
R-125A
R-126
C-128
R-127
R-128
C-129
L-109
L-110
L-111
C-130
W-101
J-101
J-102
K-101
P-101
OSCILLATOR GRID 1
1st H G GRID 2
2nd H G GRID 3
GROUND 4
PA GRID 5
PA PLATE 6
A+ 7
B+ 8
R-115
R-117
R-118
R-121
C-120
C-121
C-136
V-105
JAN-12SH7
R-134
K-117
S-101A
S108
O-101
K-102
K-103
C-134
C-135
K-107
K-108
K-109
K-110
K-111
K-112
K-113
K-114
K-115
K-116
Y-101
Y-102
Y-103
Y-104
Y-105
Y-106
Y-107
Y-108
CLUTCH BRAKE
B-101
C-138
S-102
R-150
K-104
C-137
R-135
K-105
K-118
K-106
SEE NOTE 1
R-153
R-137
S-103
R-152
JAN-6J5
V-106
R-138
R-140
C-141
T-101
C-139
R-136
C-140
C-142
T-102
C-143
R-125B
JAN-6L6GA
V-108
V-107
JAN-6L6GA
C-148
C-147
C-149
R-147
T-104
R-139
R-143
C-144
V-109
JAN-6V6GT
C-146
T-105
HI
LO
R-109B
R-141
R-142
T-103
R-145
R-144
R-148
R-146
C-145
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
V-105
R-131
R-132B
R-132A
R-133
P-103
1
2 TONE OSCILLATOR
3 GROUND
4
5
6
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
8 CHANNEL-G
6 CHANNEL-E
3 CHANNEL-C
1 CHANNEL-A
2 CHANNEL-B
4 CHANNEL-D
7 CHANNEL-F
9 CHANNEL-H
10 B-

NOTE 1. R-151 DELETED AND R-153 CHANGED IN VALUE ON LATER PRODUCTION CHANGE.

2. JAN-6L6GA TUBES, V-107 AND V-108, WERE CHANGED TO JAN-6L6WGB.

Figure 8-25. Radio Transmitter T-67B/ARC-3—Schematic Diagram


K-
10
11
12
3
2
1
7
13
14
P-1003
X-1004
A
B
C


14
7
8
9
10
11
12
13
6
5
4
3
2
1

TERM. IDENTIFICATION
TERMINAL END VIEW OF RELAY

Adapter UG-613A/U—Schematic Diagram

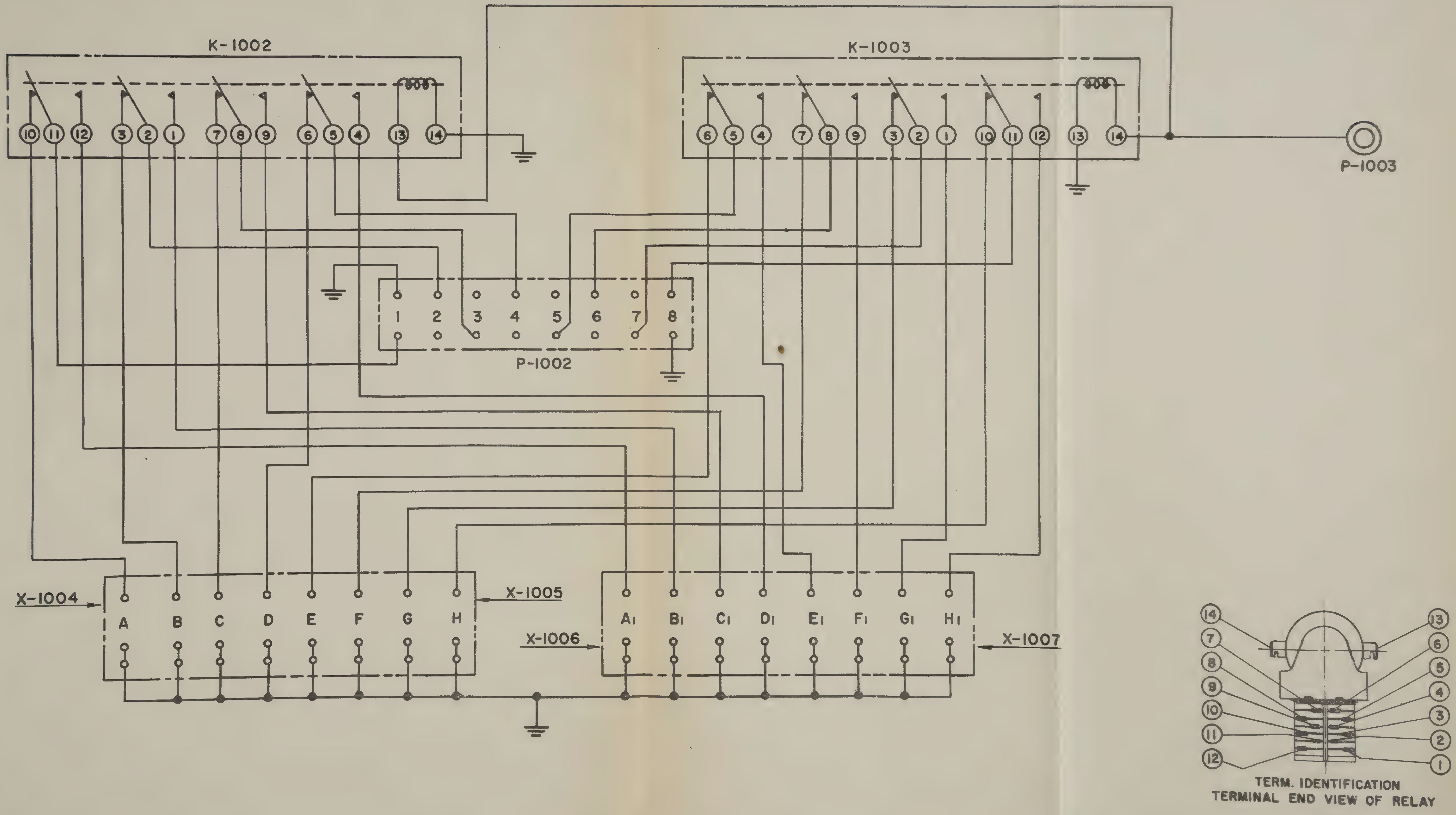

K-1002
10
11
12
3
2
1
7
8
9
6
5
4
13
14
K-1003
6
5
4
7
8
9
3
2
1
10
11
12
13
14
P-1003
1
2
3
4
5
6
7
8
P-1002
X-1004
A
B
C
D
E
F
G
H
X-1005
X-1006
A1
B1
C1
D1
E1
F1
G1
H1
X-1007
14
7
8
9
10
11
12
13
6
5
4
3
2
1
TERM. IDENTIFICATION
TERMINAL END VIEW OF RELAY

Figure 8-26. Crystal Socket Adapter UG-613A/U—Schematic Diagram

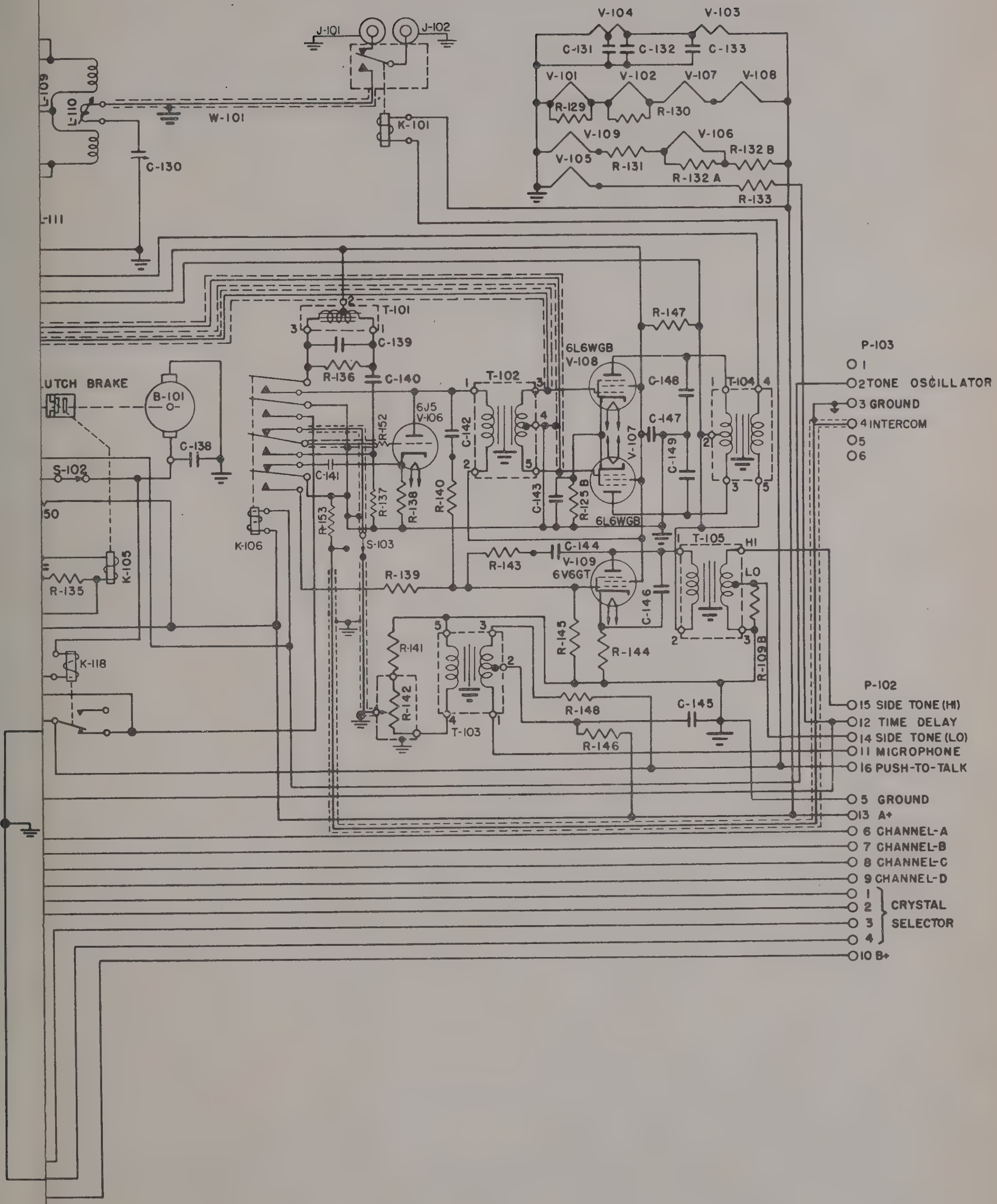

J-101
J-102
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
L-109
L-110
R-129
R-130
W-101
K-101
V-109
V-106
R-132 B
V-105
R-131
R-132 A
C-130
R-133
L-111
T-101
R-147
C-139
6L6WGB
V-108
R-136
C-140
P-103
1
2 TONE OSCILLATOR
3 GROUND
4 INTERCOM
5
6
UTCH BRAKE
B-101
T-102
6J5
V-106
C-148
T-104
C-142
R-152
C-147
V-107
C-149
C-138
S-102
C-141
C-143
R-125 B
R-137
R-138
R-140
6L6WGB
50
R-153
K-106
S-103
T-105
HI
C-144
R-143
V-109
6V6GT
LO
K-105
R-139
R-135
C-146
R-145
R-144
R-109 B
R-141
T-103
K-118
R-142
P-102
R-148
C-145
R-146
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
6 CHANNEL-A
7 CHANNEL-B
8 CHANNEL-C
9 CHANNEL-D
1
2 CRYSTAL
3 SELECTOR
4
10 B+

Figure 8-27. Radio Transmitter T-452/ARC-49—Schematic Diagram

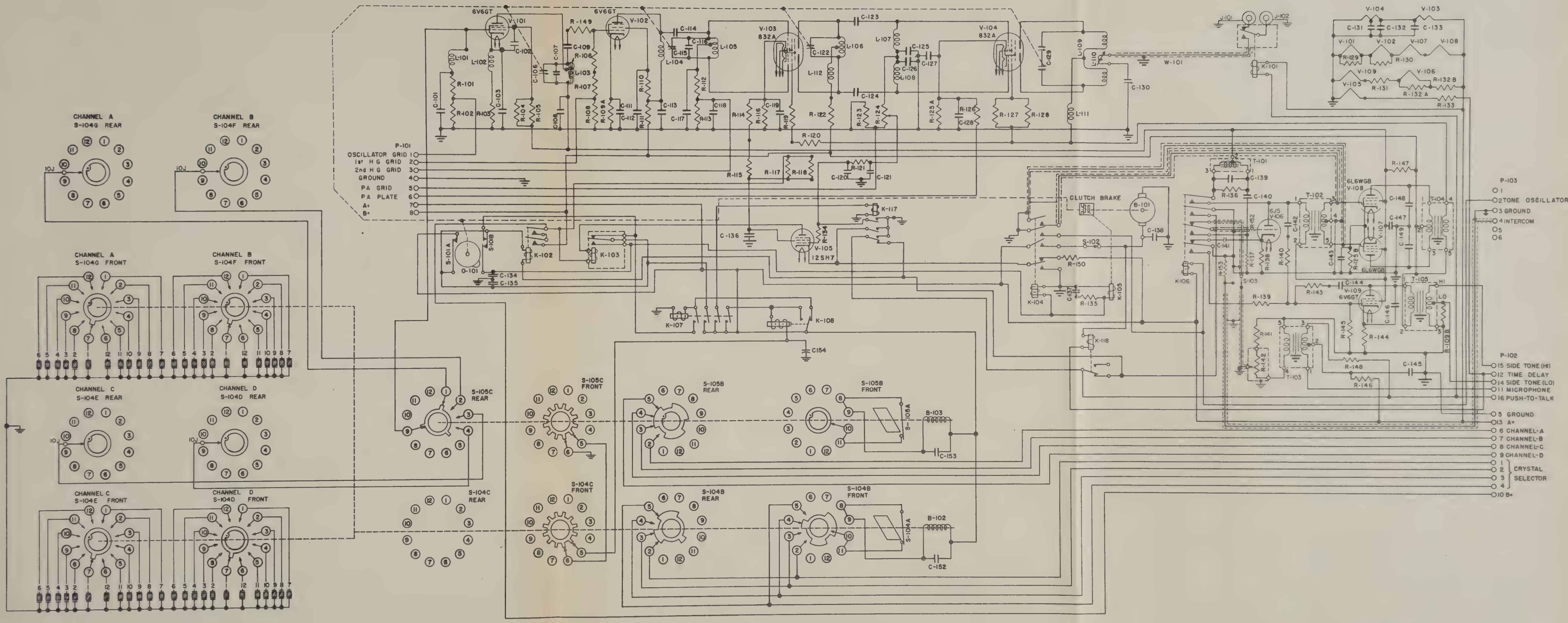
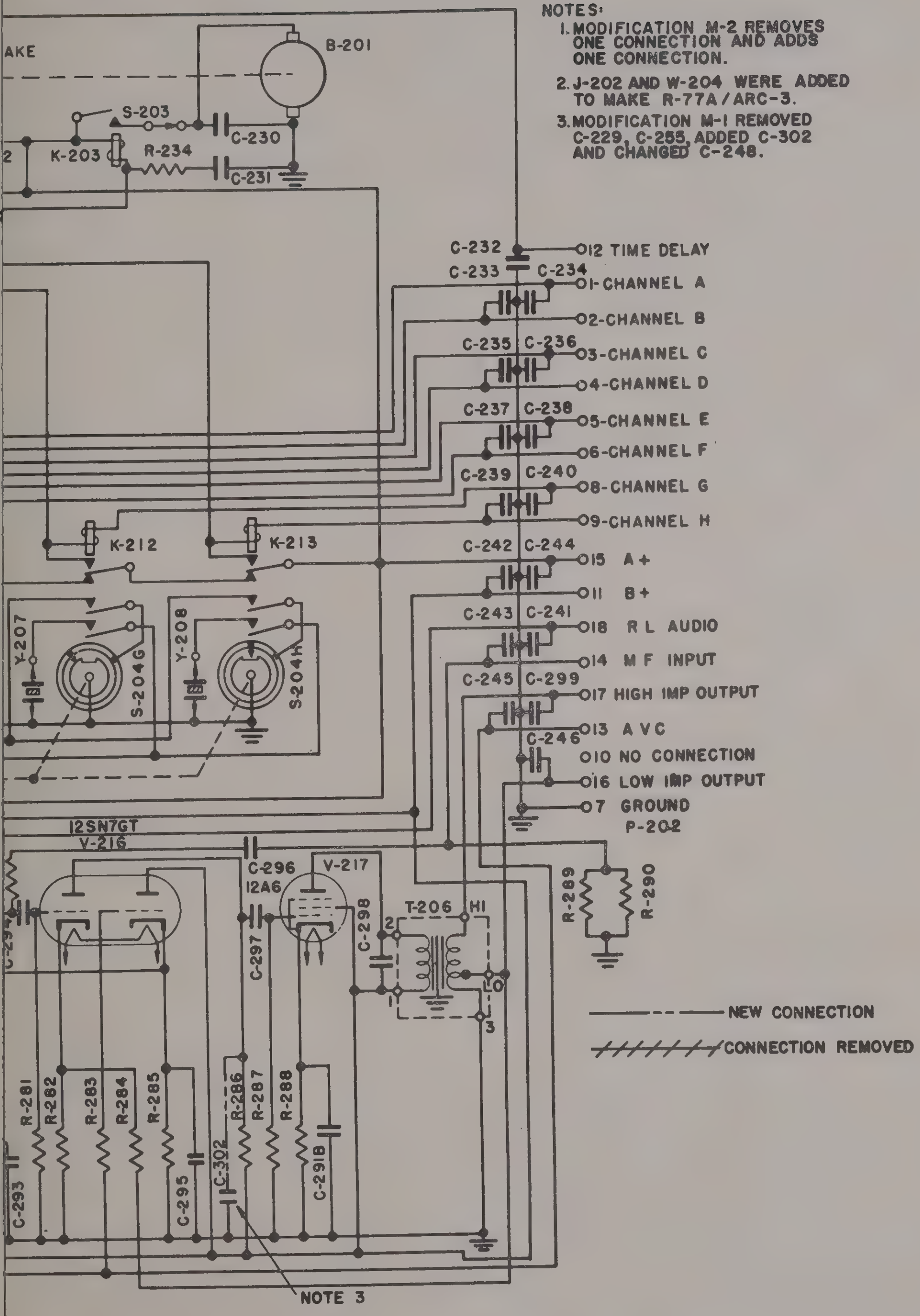

6V6GT
V-101
6V6GT
V-102
R-149
C-114
C-115
C-116
L-104
L-105
V-103
832A
C-123
C-122
L-106
L-107
C-125
C-126
C-127
L-108
L-112
V-104
832A
C-129
L-109
L-110
J-101
J-102
W-101
K-101
C-130
L-111
L-101
L-102
C-102
C-106
C-107
C-109
R-106
L-103
R-107
R-101
C-101
R-102
R-103
C-103
R-104
R-105
C-108
R-108
R-109A
C-111
C-112
R-111
R-110
C-113
R-112
C-117
R-113
C-118
R-114
R-116
C-119
R-119
R-122
C-124
R-123
R-124
R-125A
R-126
C-128
R-127
R-128
R-120
R-115
R-117
R-118
R-121
C-120
C-121
P-101
OSCILLATOR GRID 1
1st H G GRID 2
2nd H G GRID 3
GROUND 4
PA GRID 5
PA PLATE 6
A+ 7
B+ 8
CHANNEL A
S-104G REAR
CHANNEL B
S-104F REAR
CHANNEL A
S-104G FRONT
CHANNEL B
S-104F FRONT
CHANNEL C
S-104E REAR
CHANNEL D
S-104D REAR
CHANNEL C
S-104E FRONT
CHANNEL D
S-104D FRONT
10J
S-101A
S-101B
O-101
C-134
C-135
K-102
K-103
C-136
V-105
12SH7
R-134
K-117
K-107
K-108
C154
CLUTCH BRAKE
B-101
C-138
S-102
R-150
K-104
C-137
R-135
K-105
K-118
S-105C
REAR
S-105C
FRONT
S-105B
REAR
S-105B
FRONT
S-105A
B-103
C-153
S-104C
REAR
S-104C
FRONT
S-104B
REAR
S-104B
FRONT
S-104A
B-102
C-152
V-104
V-103
C-131
C-132
C-133
V-101
V-102
V-107
V-108
R-129
R-130
V-109
V-106
V-105
R-131
R-132 B
R-132 A
R-133
T-101
C-139
R-136
C-140
6J5
V-106
R-152
C-142
T-102
6L6WGB
V-108
R-147
C-148
C-147
T-104
C-149
V-107
6L6WGB
C-141
R-137
R-138
R-140
C-143
R-125
R-153
S-103
K-106
R-139
R-143
C-144
V-109
6V6GT
C-146
T-105
HI
LO
R-109B
R-141
R-142
T-103
R-145
R-144
R-148
R-146
C-145
P-103
1
2 TONE OSCILLATOR
3 GROUND
4 INTERCOM
5
6
P-102
15 SIDE TONE (HI)
12 TIME DELAY
14 SIDE TONE (LO)
11 MICROPHONE
16 PUSH-TO-TALK
5 GROUND
13 A+
6 CHANNEL-A
7 CHANNEL-B
8 CHANNEL-C
9 CHANNEL-D
1
2 CRYSTAL
3 SELECTOR
4
10 B+

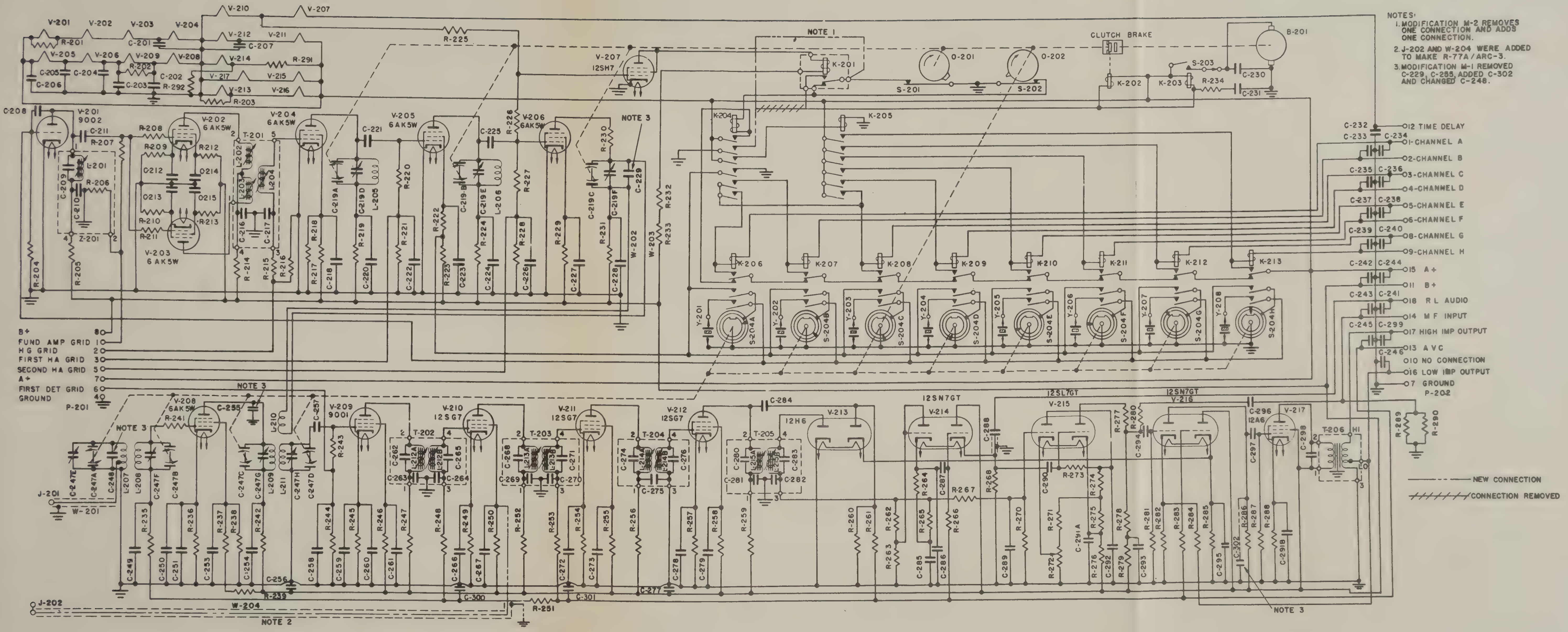
Figure 8-27. Radio Transmitter T-452/ARC-49—Schematic Diagram

NOTES:

1. MODIFICATION M-2 REMOVES ONE CONNECTION AND ADDS ONE CONNECTION.
2. J-202 AND W-204 WERE ADDED TO MAKE R-77A/ARC-3.
3. MODIFICATION M-1 REMOVED C-229, C-255, ADDED C-302 AND CHANGED C-248.

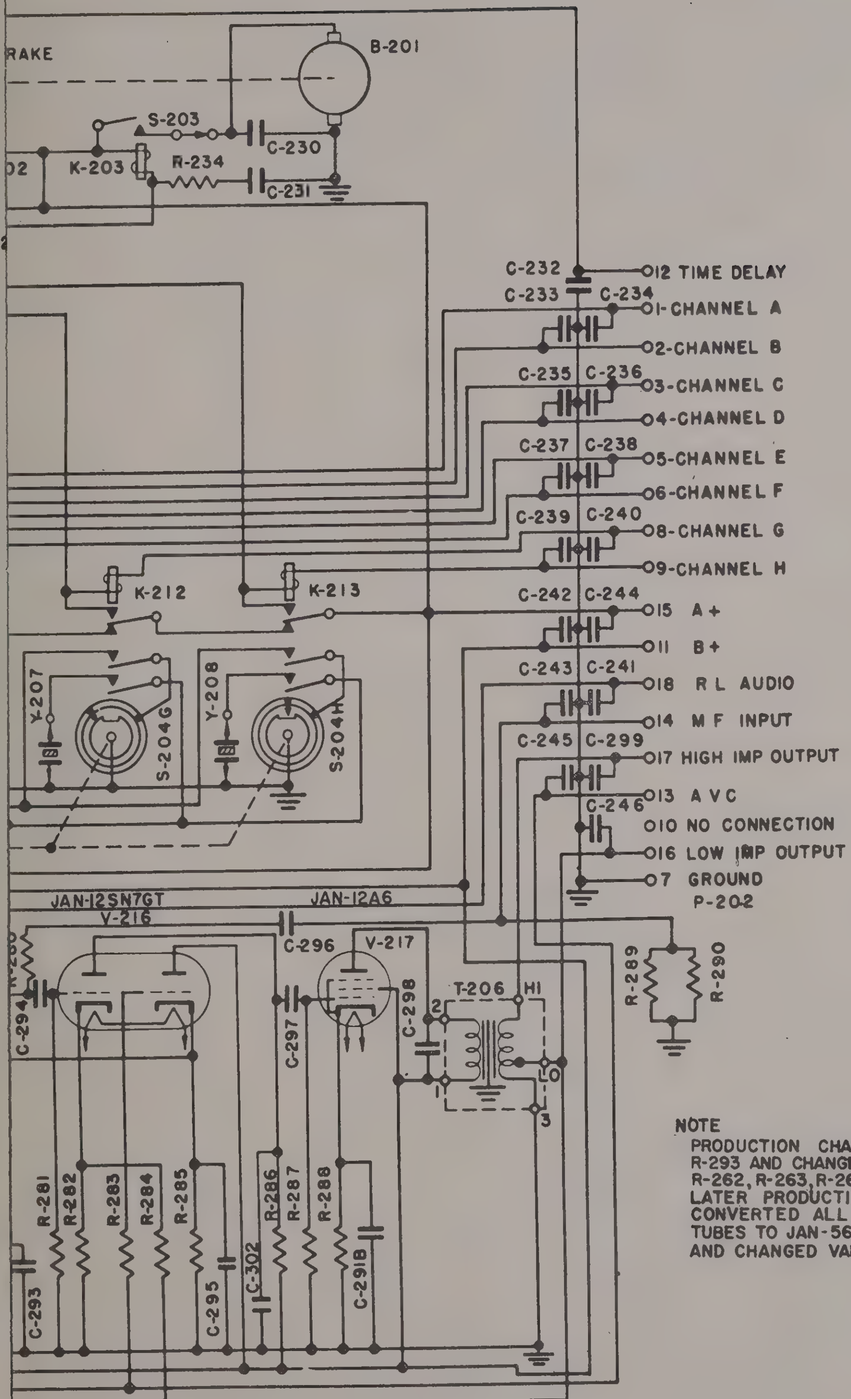

AKE
B-201
S-203
C-230
2
K-203
R-234
C-231
C-232
O12 TIME DELAY
C-233
C-234
O1-CHANNEL A
O2-CHANNEL B
C-235
C-236
O3-CHANNEL C
O4-CHANNEL D
C-237
C-238
O5-CHANNEL E
O6-CHANNEL F
C-239
C-240
O8-CHANNEL G
O9-CHANNEL H
K-212
K-213
C-242
C-244
O15 A+
O11 B+
C-243
C-241
O18 R L AUDIO
O14 M F INPUT
C-245
C-299
O17 HIGH IMP OUTPUT
O13 A V C
C-246
O10 NO CONNECTION
O16 LOW IMP OUTPUT
O7 GROUND
P-202
Y-207
S-204G
Y-208
S-204H
12SN7GT
V-216
C-296
V-217
12A6
C-294
C-297
C-298
T-206
HI
2
LO
1
3
R-289
R-290
NEW CONNECTION
CONNECTION REMOVED
R-281
R-282
R-283
R-284
R-285
C-293
C-295
C-302
R-286
R-287
R-288
C-291B
NOTE 3

8-28. *Radio Receiver R-77/ARC-3—Schematic Diagram Showing Production Change Converting Radio Receiver R-77/ARC-3 to R-77A/ARC-3 and Modifications M-1 and M-2*


V-201
V-202
V-203
V-204
V-210
V-207
V-212
V-211
R-225
R-201
C-201
C-207
V-205
V-206
V-209
V-208
V-214
R-291
C-205
C-204
R-202
C-202
V-217
V-215
C-206
C-203
R-292
V-213
V-216
R-203
C-208
V-201 9002
C-211
R-207
L-201
R-206
C-209
C-210
Z-201
R-204
R-205
R-208
V-202 6AK5W
R-209
R-212
C212
C214
C213
C215
R-210
R-213
R-211
V-203 6AK5W
T-201
L-202
L-203
L-204
C-216
C-217
R-214
R-215
R-216
V-204 6AK5W
C-221
C-219A
C-219D
L-205
R-217
R-218
C-218
R-219
C-220
V-205 6AK5W
R-220
R-221
C-222
R-222
C-219B
C-219E
L-206
R-223
C-223
R-224
C-224
C-225
R-226
V-206 6AK5W
R-227
R-228
C-226
R-229
C-227
V-207 12SH7
R-230
NOTE 3
C-219C
C-219F
C-229
R-231
C-228
W-202
W-203
R-232
R-233
NOTE 1
K-201
O-201
O-202
S-201
S-202
CLUTCH BRAKE
B-201
S-203
C-230
K-202
K-203
R-234
C-231
K-204
K-205
K-206
K-207
K-208
K-209
K-210
K-211
K-212
K-213
Y-201
S-204A
Y-202
S-204B
Y-203
S-204C
Y-204
S-204D
Y-205
S-204E
Y-206
S-204F
Y-207
S-204G
Y-208
S-204H
C-232
O12 TIME DELAY
C-233
C-234
O1-CHANNEL A
O2-CHANNEL B
C-235
C-236
O3-CHANNEL C
O4-CHANNEL D
C-237
C-238
O5-CHANNEL E
O6-CHANNEL F
C-239
C-240
O8-CHANNEL G
O9-CHANNEL H
C-242
C-244
O15 A+
O11 B+
C-243
C-241
O18 R L AUDIO
O14 M F INPUT
C-245
C-299
O17 HIGH IMP OUTPUT
O13 A V C
C-246
O10 NO CONNECTION
O16 LOW IMP OUTPUT
O7 GROUND
P-202
B+ 8
FUND AMP GRID 1
H G GRID 2
FIRST HA GRID 3
SECOND HA GRID 5
A+ 7
FIRST DET GRID 6
GROUND 4
P-201
NOTE 3
V-208 6AK5W
C-255
R-241
C-257
L-210
NOTE 3
J-201
W-201
C-247E
C-247A
C-248
L-207
L-208
C-247F
C-247B
C-247C
C-247G
L-209
L-211
C-247H
C-247D
R-235
R-236
R-237
R-238
R-242
C-249
C-250
C-251
C-253
C-254
C-256
R-239
V-209 9001
R-243
C-258
R-244
R-245
C-259
C-260
R-246
C-261
R-247
V-210 12SG7
T-202
C-262
L-212A
L-212B
C-265
C-263
C-264
R-248
C-266
R-249
C-267
R-250
C-300
V-211 12SG7
T-203
C-268
L-213A
L-213B
C-271
C-269
C-270
R-252
R-253
C-272
R-254
C-273
R-255
C-301
R-251
V-212 12SG7
T-204
C-274
L-214A
L-214B
C-276
C-275
R-256
R-257
C-278
R-258
C-279
C-277
C-284
12H6
V-213
T-205
C-280
L-215A
L-215B
C-283
C-281
C-282
R-259
R-260
R-261
R-262
R-263
12SN7GT
V-214
C-288
R-264
C-287
R-267
R-268
R-265
R-266
C-285
C-286
C-289
R-270
12SL7GT
V-215
R-277
R-280
C-290
R-273
R-274
R-271
C-291A
R-275
R-272
R-276
C-292
R-278
R-279
C-293
12SN7GT
V-216
C-294
R-281
R-282
R-283
R-284
R-285
R-295
C-302
C-296
12A6
V-217
C-297
C-298
T-206
HI
R-286
R-287
R-288
C-291B
R-289
R-290
NOTE 3
J-202
W-204
NOTE 2
NEW CONNECTION
CONNECTION REMOVED

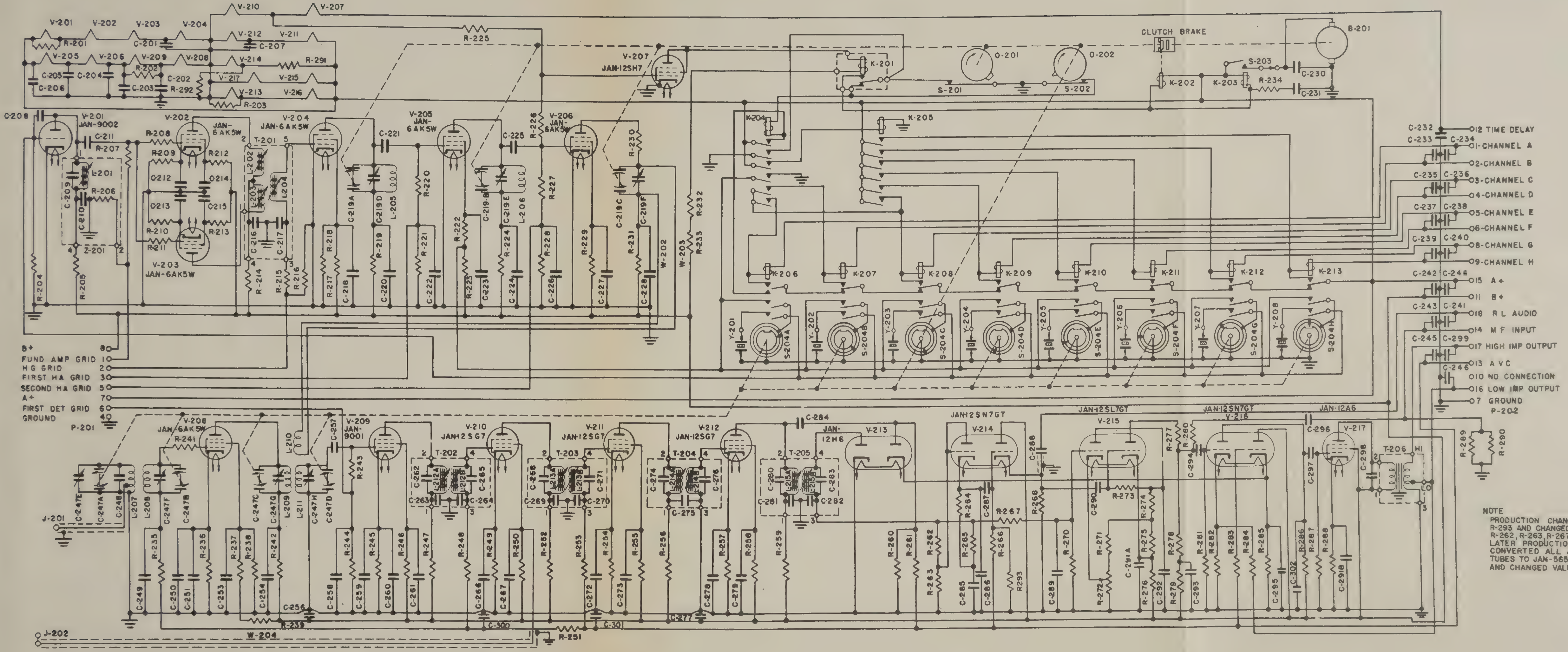
NOTES:
1. MODIFICATION M-2 REMOVES ONE CONNECTION AND ADDS ONE CONNECTION.
2. J-202 AND W-204 WERE ADDED TO MAKE R-77A/ARC-3.
3. MODIFICATION M-1 REMOVED C-229, C-255, ADDED C-302 AND CHANGED C-248.

Figure 8-28. Radio Receiver R-77/ARC-3—Schematic Diagram Showing Production Change Converting Radio Receiver R-77/ARC-3 to R-77A/ARC-3 and Modifications M-1 and M-2


RAKE
B-201
S-203
C-230
K-203
R-234
C-231
C-232
C-233
C-234
12 TIME DELAY
1-CHANNEL A
2-CHANNEL B
C-235
C-236
3-CHANNEL C
4-CHANNEL D
C-237
C-238
5-CHANNEL E
6-CHANNEL F
C-239
C-240
8-CHANNEL G
9-CHANNEL H
K-212
K-213
C-242
C-244
15 A+
11 B+
C-243
C-241
18 R L AUDIO
14 M F INPUT
C-245
C-299
17 HIGH IMP OUTPUT
13 A V C
C-246
10 NO CONNECTION
16 LOW IMP OUTPUT
7 GROUND
P-202
Y-207
S-204G
Y-208
S-204H
JAN-12SN7GT
V-216
JAN-12A6
C-296
V-217
C-294
C-297
C-298
T-206
HI
LO
R-289
R-290
R-281
R-282
R-283
R-284
R-285
C-293
C-295
C-302
R-286
R-287
R-288
C-291B

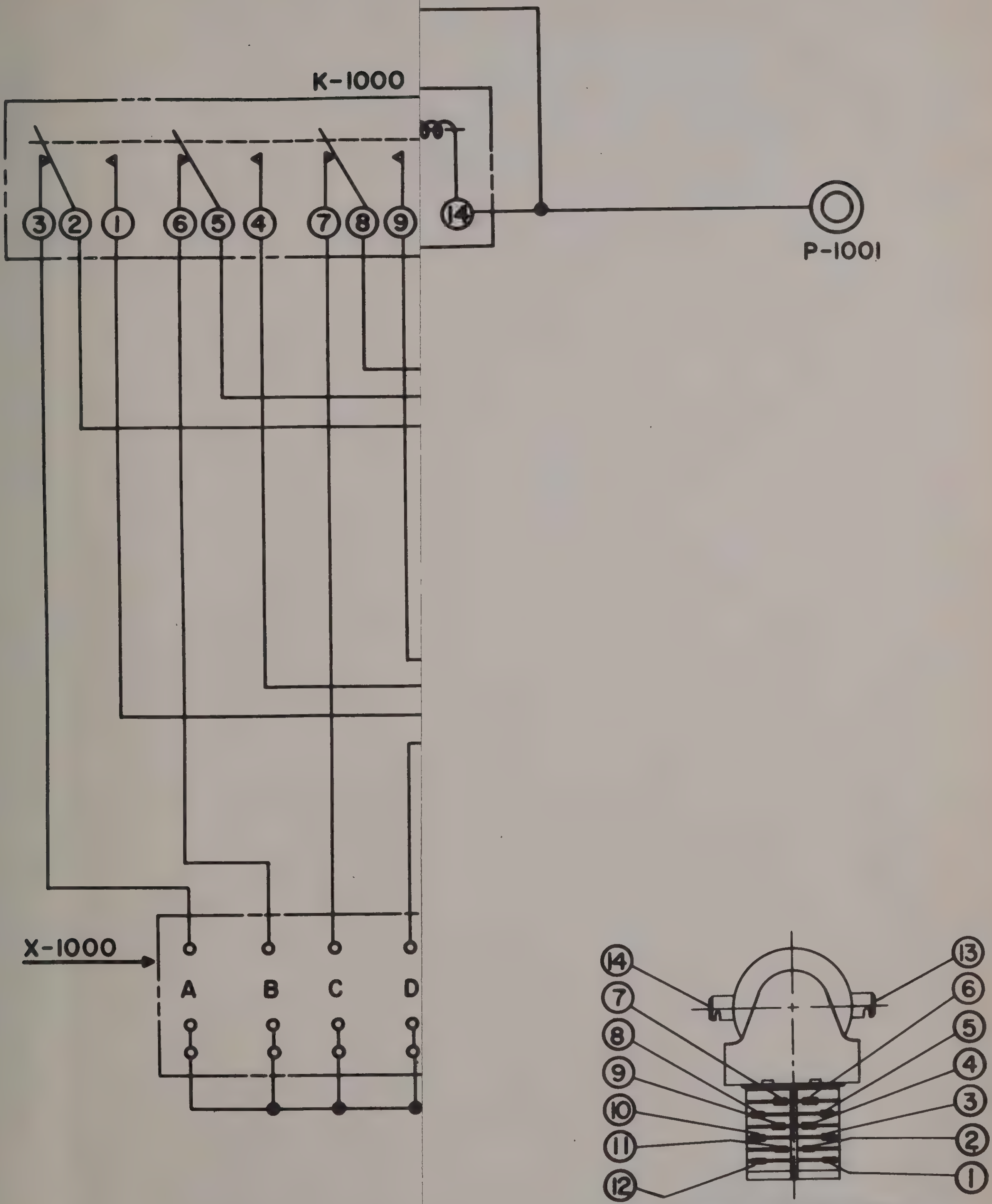
NOTE
PRODUCTION CHANGE ADDED R-293 AND CHANGED VALUE OF R-262, R-263, R-267 & R-270. LATER PRODUCTION CHANGE CONVERTED ALL JAN-6AK5W TUBES TO JAN-5654/6AK5W AND CHANGED VALUE OF R-284.

Figure 8-29. Radio Receiver R-77B/ARC-3—Schematic Diagram


V-201 JAN-9002
V-202 JAN-6AK5W
V-203 JAN-6AK5W
V-204 JAN-6AK5W
V-205 JAN-6AK5W
V-206 JAN-6AK5W
V-207 JAN-12SH7
V-208 JAN-6AK5W
V-209 JAN-9001
V-210 JAN-12SG7
V-211 JAN-12SG7
V-212 JAN-12SG7
V-213 JAN-12H6
V-214 JAN-12SN7GT
V-215 JAN-12SL7GT
V-216 JAN-12SN7GT
V-217 JAN-12A6
CLUTCH BRAKE
B-201
O-201
O-202
S-201
S-202
S-203
K-201
K-202
K-203
K-204
K-205
K-206
K-207
K-208
K-209
K-210
K-211
K-212
K-213
Y-201
Y-202
Y-203
Y-204
Y-205
Y-206
Y-207
Y-208
S-204A
S-204B
S-204C
S-204D
S-204E
S-204F
S-204G
S-204H
T-201
T-202
T-203
T-204
T-205
T-206
Z-201
W-202
W-203
W-204
J-201
J-202
B+ 8
FUND AMP GRID 1
H G GRID 2
FIRST H A GRID 3
SECOND H A GRID 5
A+ 7
FIRST DET GRID 6
GROUND 4
P-201
12 TIME DELAY
1 CHANNEL A
2 CHANNEL B
3 CHANNEL C
4 CHANNEL D
5 CHANNEL E
6 CHANNEL F
8 CHANNEL G
9 CHANNEL H
15 A+
11 B+
18 R L AUDIO
14 M F INPUT
17 HIGH IMP OUTPUT
13 A V C
10 NO CONNECTION
16 LOW IMP OUTPUT
7 GROUND
P-202

NOTE
PRODUCTION CHANGE ADDED R-293 AND CHANGED VALUE OF R-262, R-263, R-267 & R-270. LATER PRODUCTION CHANGE CONVERTED ALL JAN-6AK5W TUBES TO JAN-5654/6AK5W AND CHANGED VALUE OF R-284.

Figure 8-29. Radio Receiver R-77B/ARC-3—Schematic Diagram


K-1000
3
2
1
6
5
4
7
8
9
14
P-1001
X-1000
A
B
C
D

14
7
8
9
10
11
12
13
6
5
4
3
2
1

TERM. IDENTIFICATION
TERMINAL END VIEW OF RELAY

ter UG-614A/U—Schematic Diagram

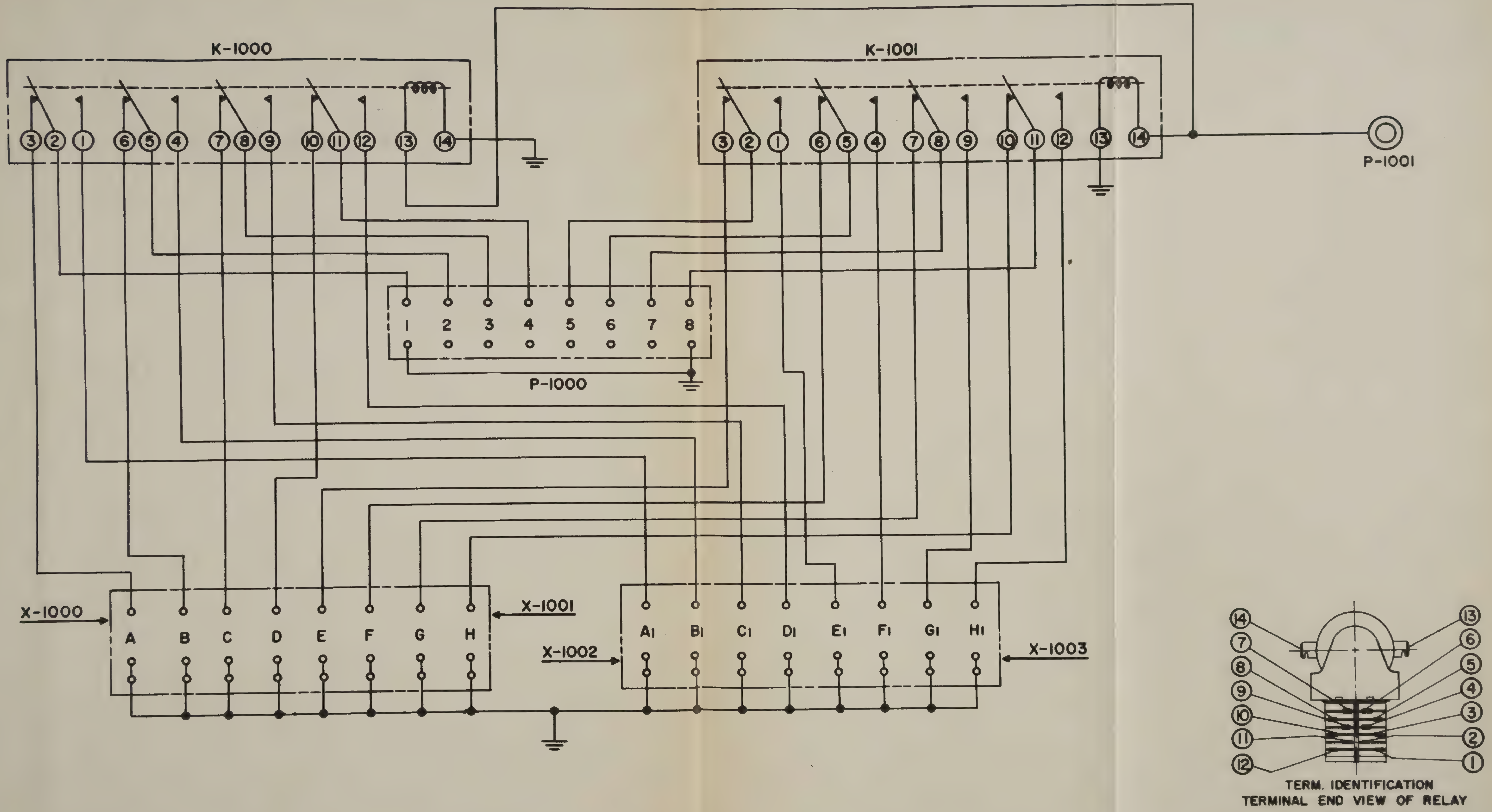

K-1000
③ ② ① ⑥ ⑤ ④ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭
K-1001
③ ② ① ⑥ ⑤ ④ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭
P-1001
1 2 3 4 5 6 7 8
P-1000
X-1000
A B C D E F G H
X-1001
X-1002
A1 B1 C1 D1 E1 F1 G1 H1
X-1003
⑭ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫
⑬ ⑥ ⑤ ④ ③ ② ①
TERM. IDENTIFICATION
TERMINAL END VIEW OF RELAY

Figure 8-30. Crystal Socket Adapter UG-614A/U—Schematic Diagram

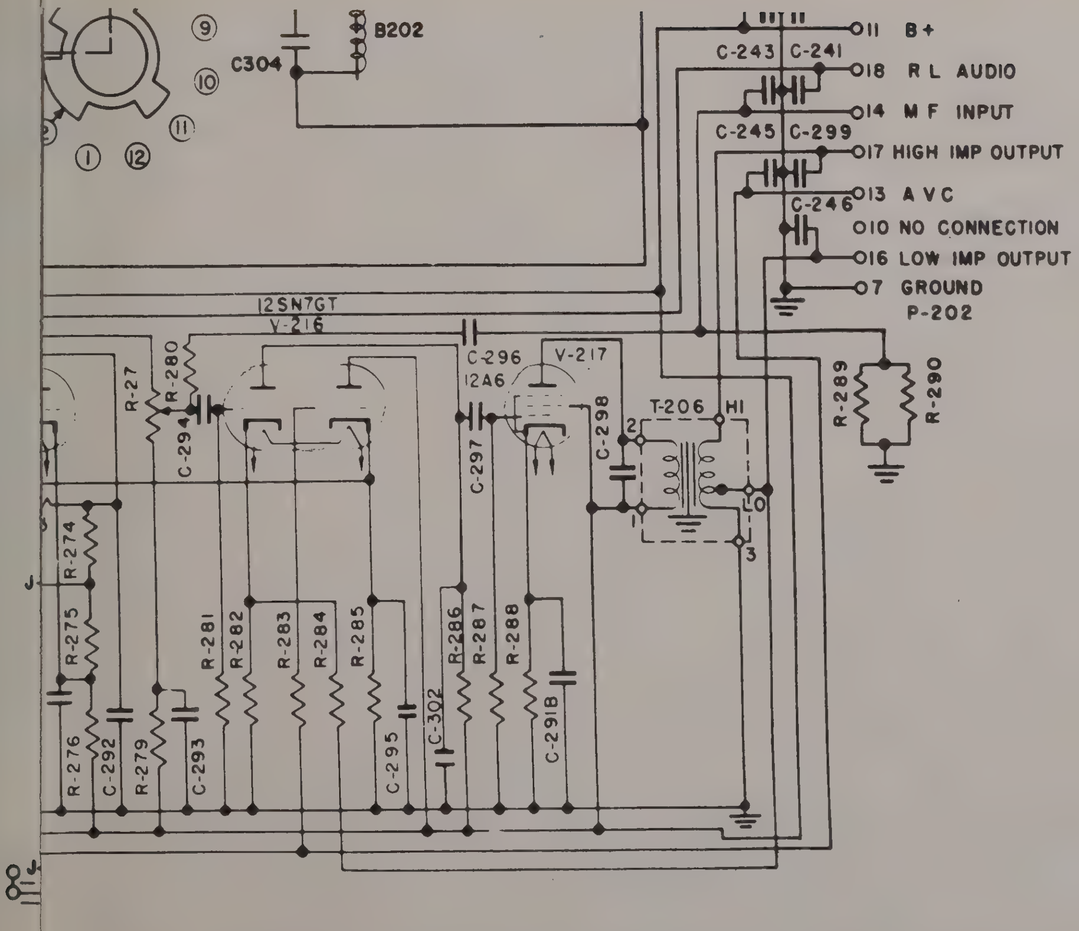

9
10
11
12
1
2
C304
B202
C-243
C-241
C-245
C-299
C-246
11 B+
18 R L AUDIO
14 M F INPUT
17 HIGH IMP OUTPUT
13 A V C
10 NO CONNECTION
16 LOW IMP OUTPUT
7 GROUND
P-202
12SN7GT
V-216
C-296
V-217
12A6
R-27
R-280
C-294
C-297
C-298
T-206
HI
2
LO
3
R-289
R-290
R-274
J
R-275
R-276
C-292
R-279
C-293
R-281
R-282
R-283
R-284
R-285
C-295
C-302
R-286
R-287
R-288
C-291B

Figure 8-31. Radio Receiver R-608/ARC-49—Schematic Diagram

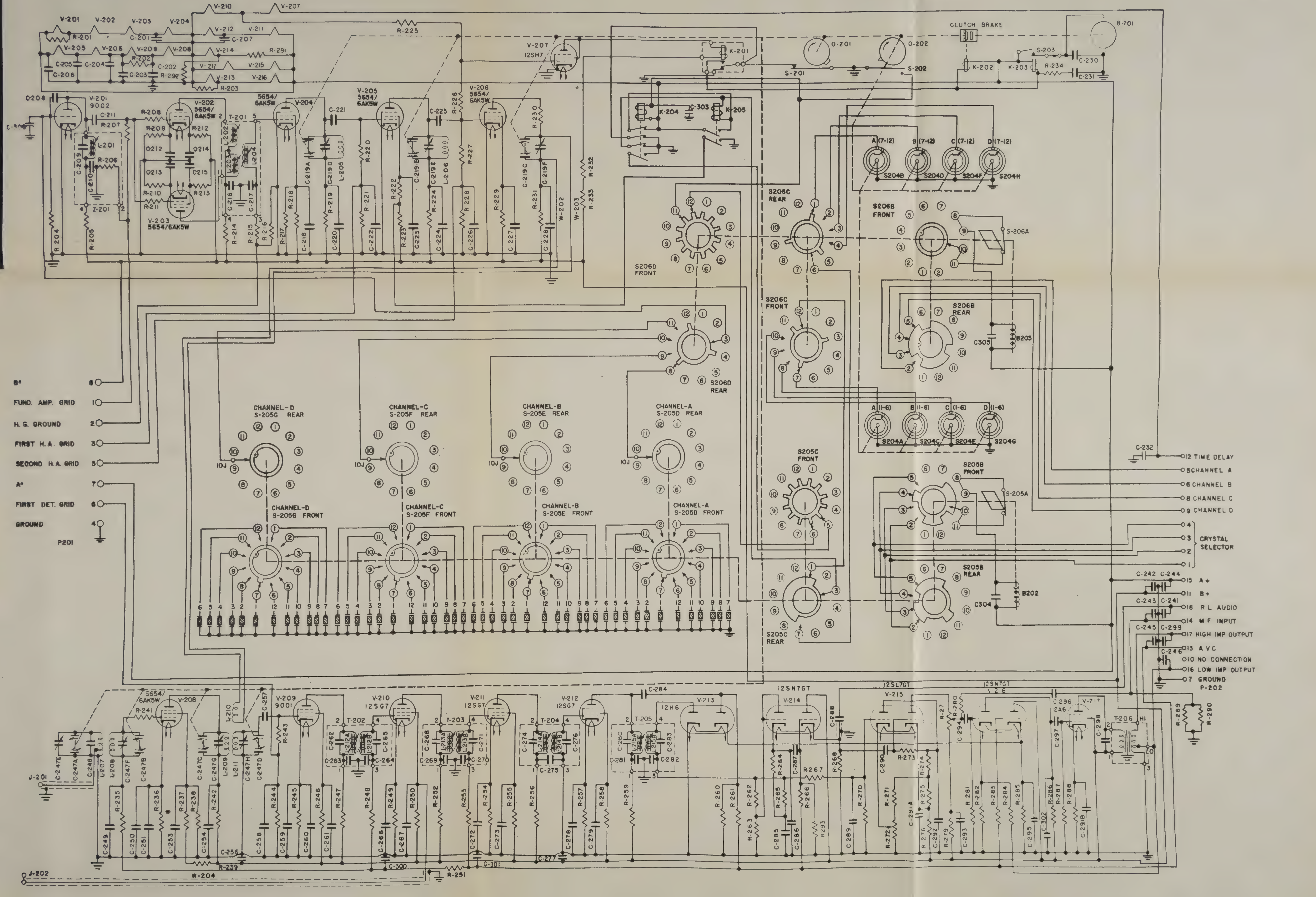
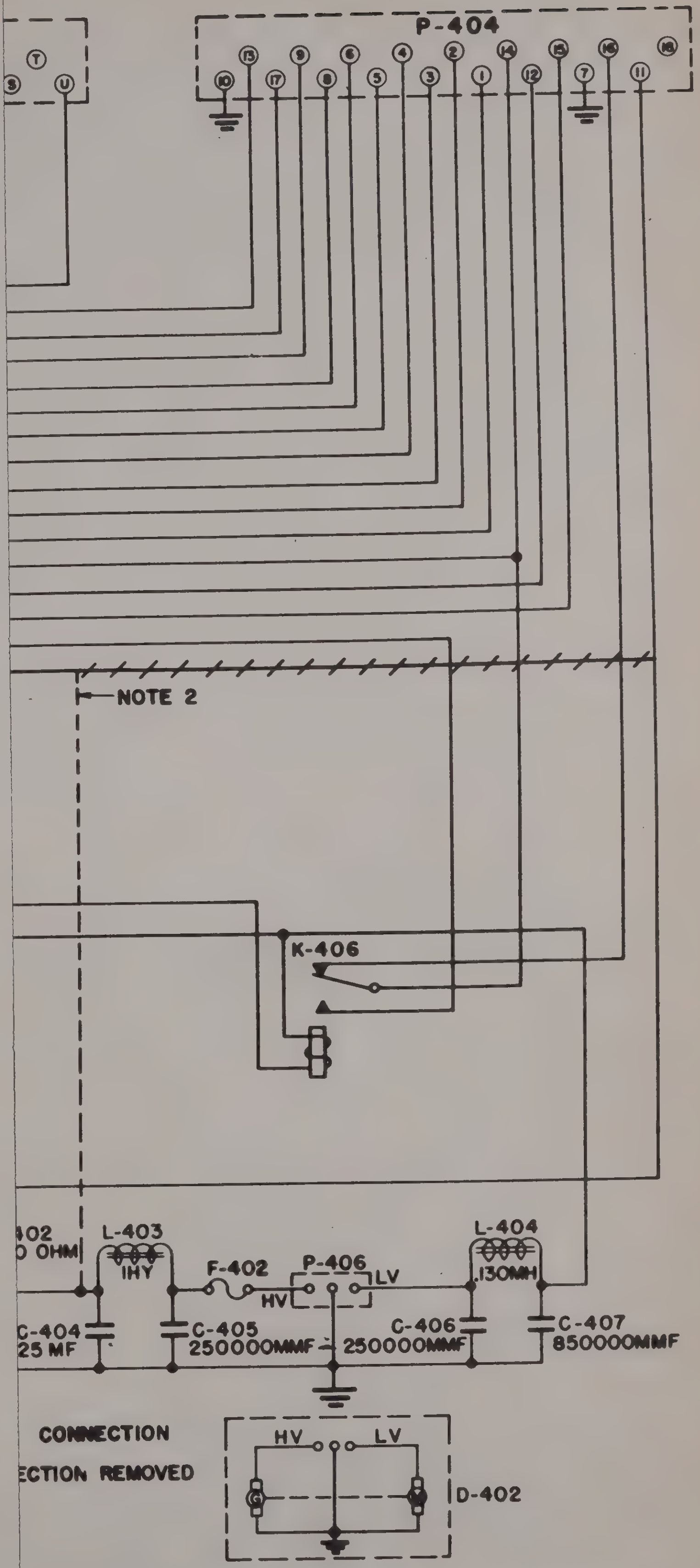
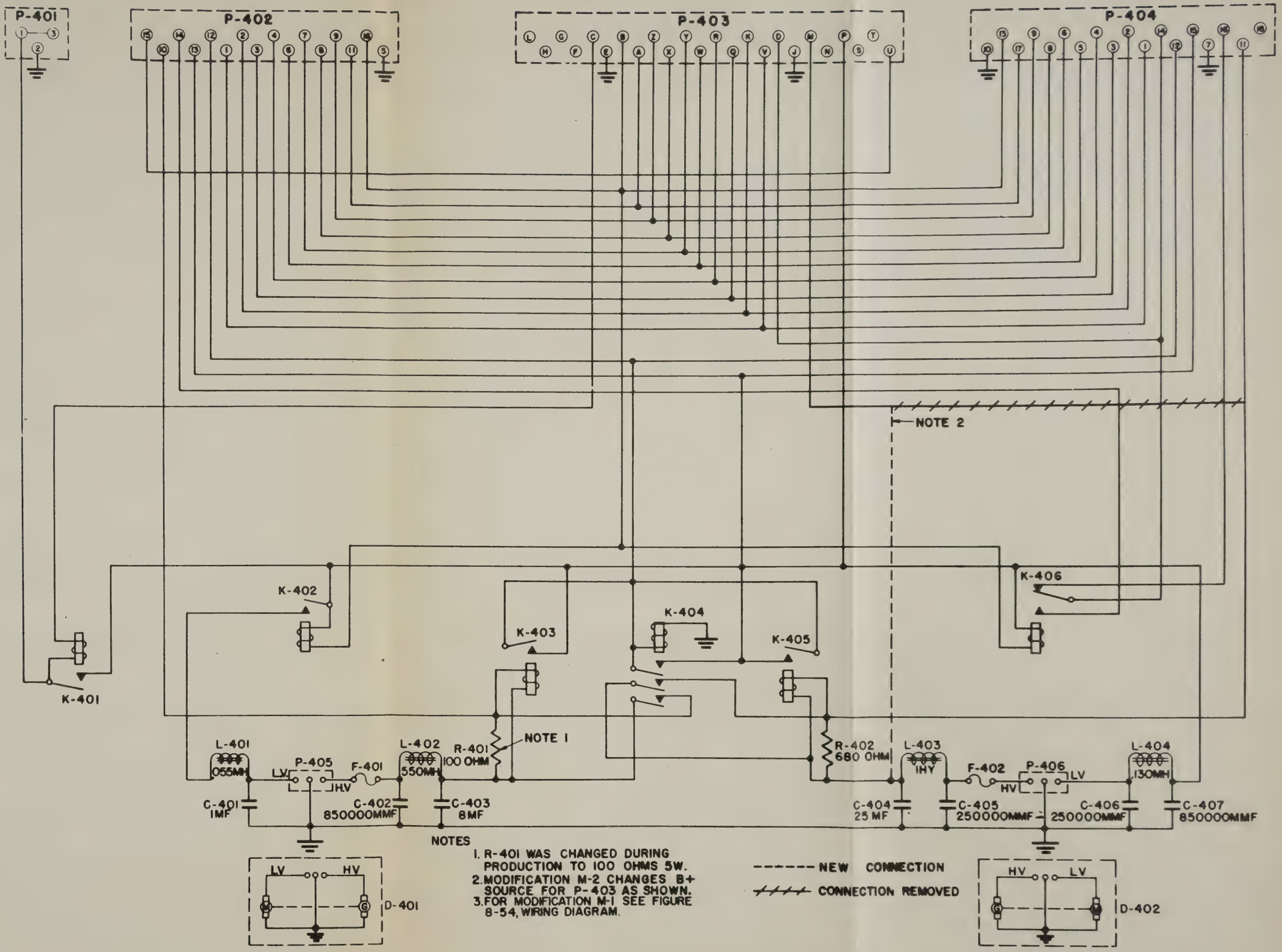

V-201
V-202
V-203
V-204
V-205
V-206
V-207
V-208
V-209
V-210
V-211
V-212
V-213
V-214
V-215
V-216
V-217
V-201 9002
V-202 5654/6AK5W
V-203 5654/6AK5W
V-204 5654/6AK5W
V-205 5654/6AK5W
V-206 5654/6AK5W
V-207 12SH7
V-208 5654/6AK5W
V-209 9001
V-210 12SG7
V-211 12SG7
V-212 12SG7
V-213 12H6
V-214 12SN7GT
V-215 12SL7GT
V-216 12SN7GT
V-217 12J6
T-201
T-202
T-203
T-204
T-205
T-206
Z-201
CLUTCH BRAKE
B-201
O-201
O-202
K-201
K-202
K-203
K-204
K-205
S-201
S-202
S-203
C-303
S204A
S204B
S204C
S204D
S204E
S204F
S204G
S204H
A (7-12)
B (7-12)
C (7-12)
D (7-12)
A (1-6)
B (1-6)
C (1-6)
D (1-6)
S206C REAR
S206B FRONT
S-206A
S206D FRONT
S206C FRONT
S206B REAR
S206D REAR
C305
B203
S205C FRONT
S205B FRONT
S-205A
S205B REAR
S205C REAR
C304
B202
CHANNEL-D S-205G REAR
CHANNEL-C S-205F REAR
CHANNEL-B S-205E REAR
CHANNEL-A S-205D REAR
CHANNEL-D S-205G FRONT
CHANNEL-C S-205F FRONT
CHANNEL-B S-205E FRONT
CHANNEL-A S-205D FRONT
B+ 8
FUND. AMP. GRID 1
H. G. GROUND 2
FIRST H.A. GRID 3
SECOND H.A. GRID 5
A+ 7
FIRST DET. GRID 6
GROUND 4
P201
12 TIME DELAY
5 CHANNEL A
6 CHANNEL B
8 CHANNEL C
9 CHANNEL D
4
3 CRYSTAL SELECTOR
2
1
15 A+
11 B+
18 R L AUDIO
14 M F INPUT
17 HIGH IMP OUTPUT
13 A V C
10 NO CONNECTION
16 LOW IMP OUTPUT
7 GROUND
P-202
C-232
C-242
C-244
C-243
C-241
C-245
C-299
C-246
J-201
J-202
W-204
W-202
W-203
R-251
C-300
C-301
C-277
C-284
L-201
L-202
L-203
L-204
L-205
L-206
L-207
L-208
L-209
L-210
L-211

Figure 8-31. Radio Receiver R-608/ARC-49—Schematic Diagram


S
T
U
P-404
13
9
6
4
2
14
15
16
18
10
17
8
5
3
1
12
7
11
NOTE 2
K-406
402
0 OHM
L-403
1HY
F-402
P-406
HV
LV
L-404
.130MH
C-404
25 MF
C-405
250000MMF
C-406
250000MMF
C-407
850000MMF
CONNECTION
ECTION REMOVED
HV
LV
D-402

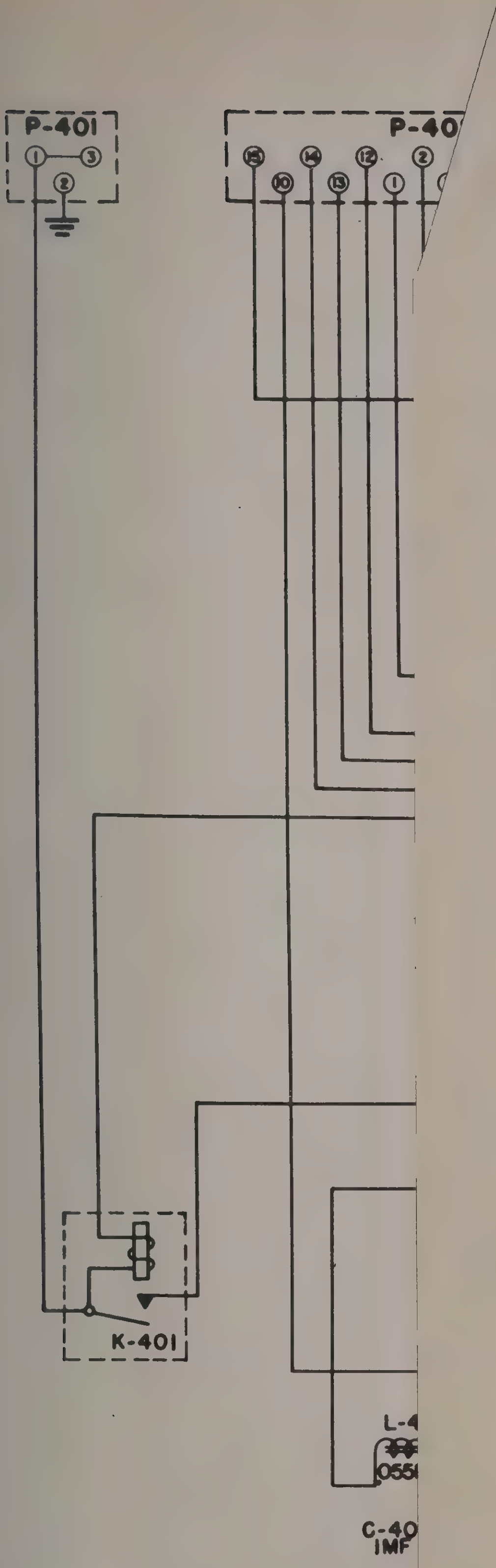
-3—Schematic Diagram Showing Production Change and ation M-1 and M-2

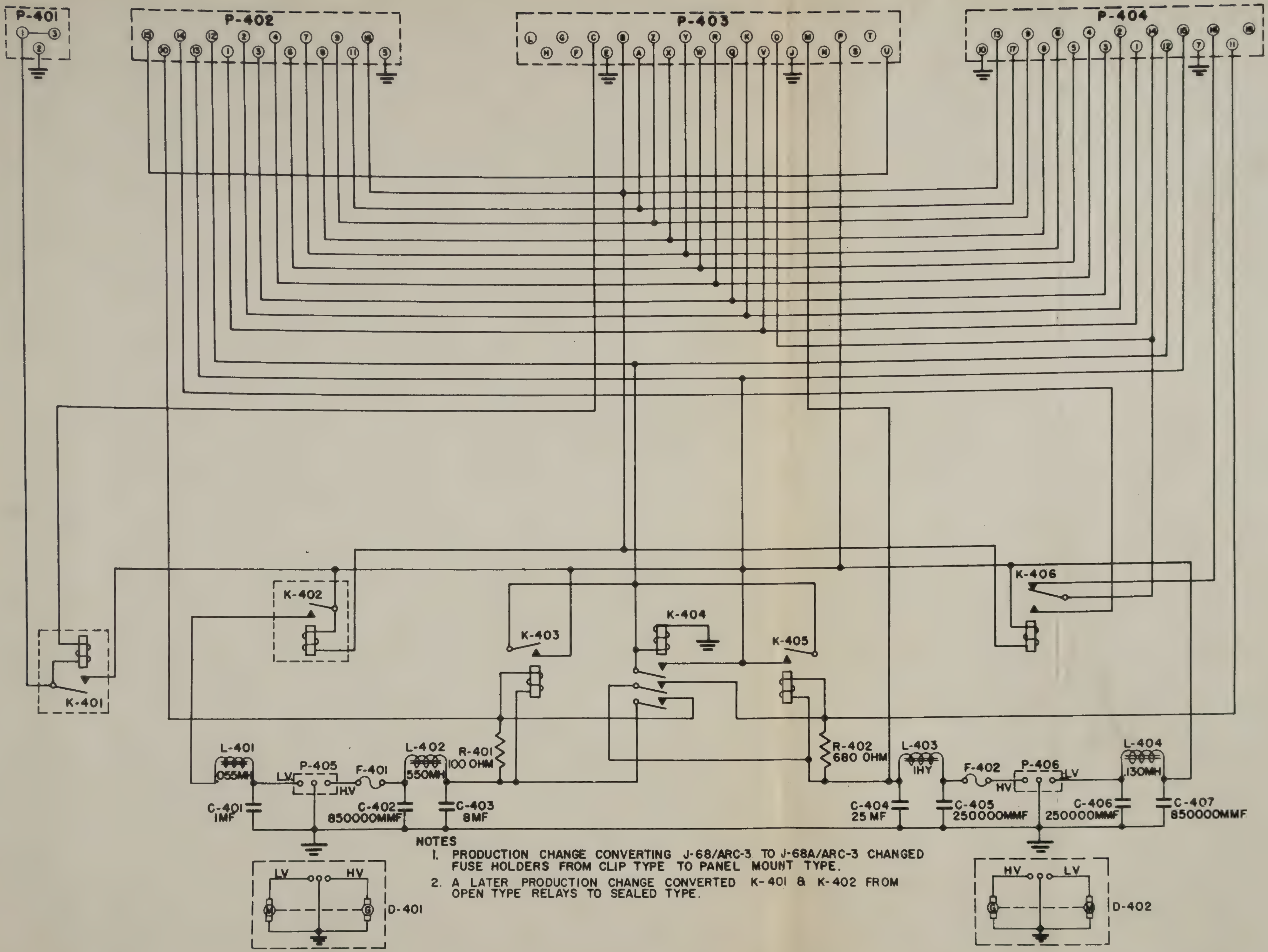

P-401
P-402
P-403
P-404
NOTE 2
K-401
K-402
K-403
K-404
K-405
K-406
NOTE 1
L-401 .055MH
P-405
LV
HV
F-401
L-402 .550MH
R-401 100 OHM
R-402 680 OHM
L-403 IHY
F-402
P-406
L-404 .130MH
C-401 IMF
C-402 850000MMF
C-403 8MF
C-404 25 MF
C-405 250000MMF
C-406 250000MMF
C-407 850000MMF
D-401
D-402
NEW CONNECTION
CONNECTION REMOVED

NOTES

1. R-401 WAS CHANGED DURING PRODUCTION TO 100 OHMS 5W.
2. MODIFICATION M-2 CHANGES B+ SOURCE FOR P-403 AS SHOWN.
3. FOR MODIFICATION M-1 SEE FIGURE 8-54, WIRING DIAGRAM.

Figure 8-32. Power Junction Box J-68/ARC-3—Schematic Diagram Showing Production Change and Modification M-1 and M-2

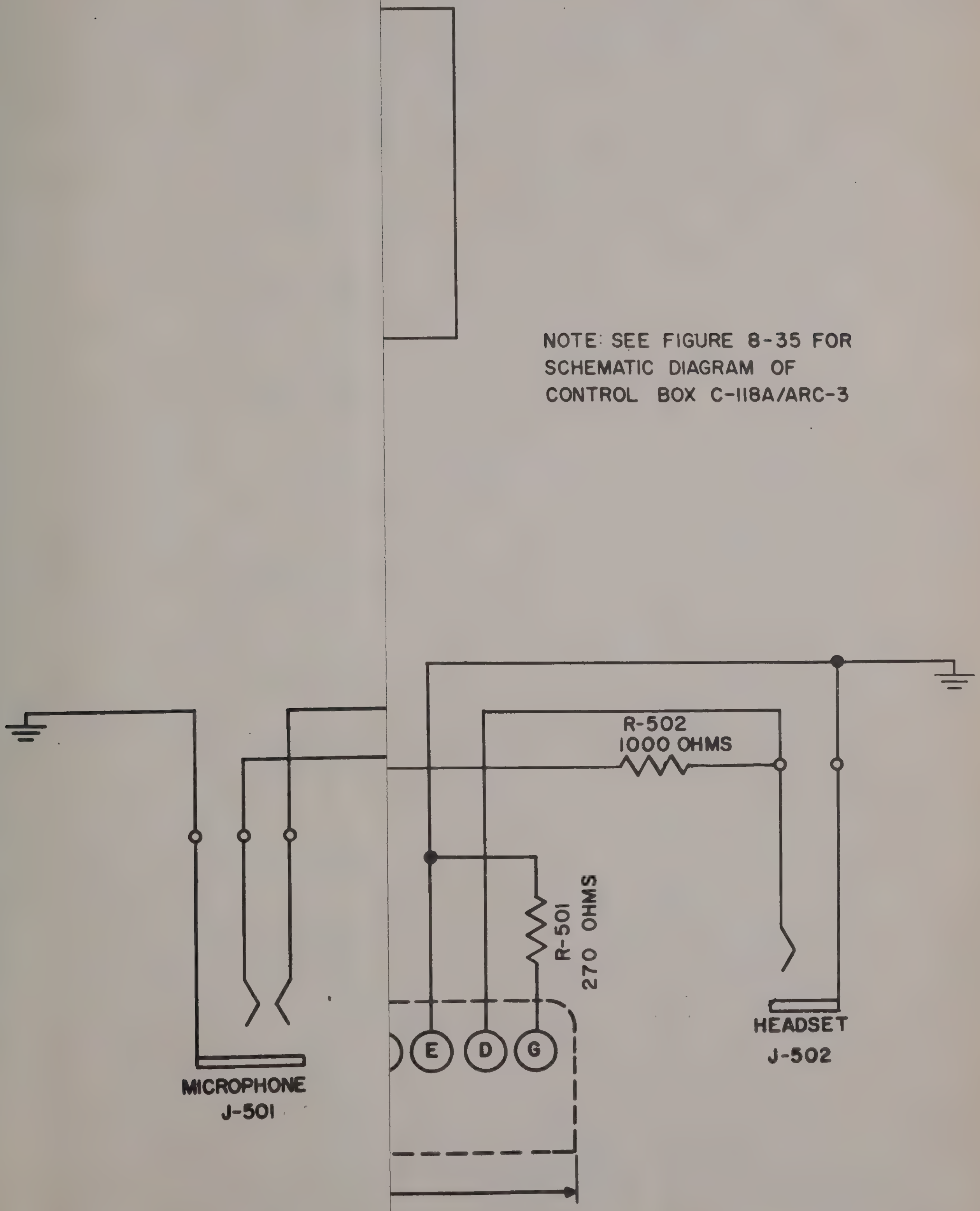

P-401
P-40
K-401
L-4
C-40
1MF


P-401
P-402
P-403
P-404
K-401
K-402
K-403
K-404
K-405
K-406
L-401
.055MH
LV
P-405
HV
F-401
L-402
.550MH
R-401
100 OHM
C-401
1MF
C-402
850000MMF
C-403
8MF
R-402
680 OHM
L-403
1HY
F-402
HV
P-406
LV
L-404
.130MH
C-404
25 MF
C-405
250000MMF
250000MMF
C-406
C-407
850000MMF
LV
HV
D-401
HV
LV
D-402

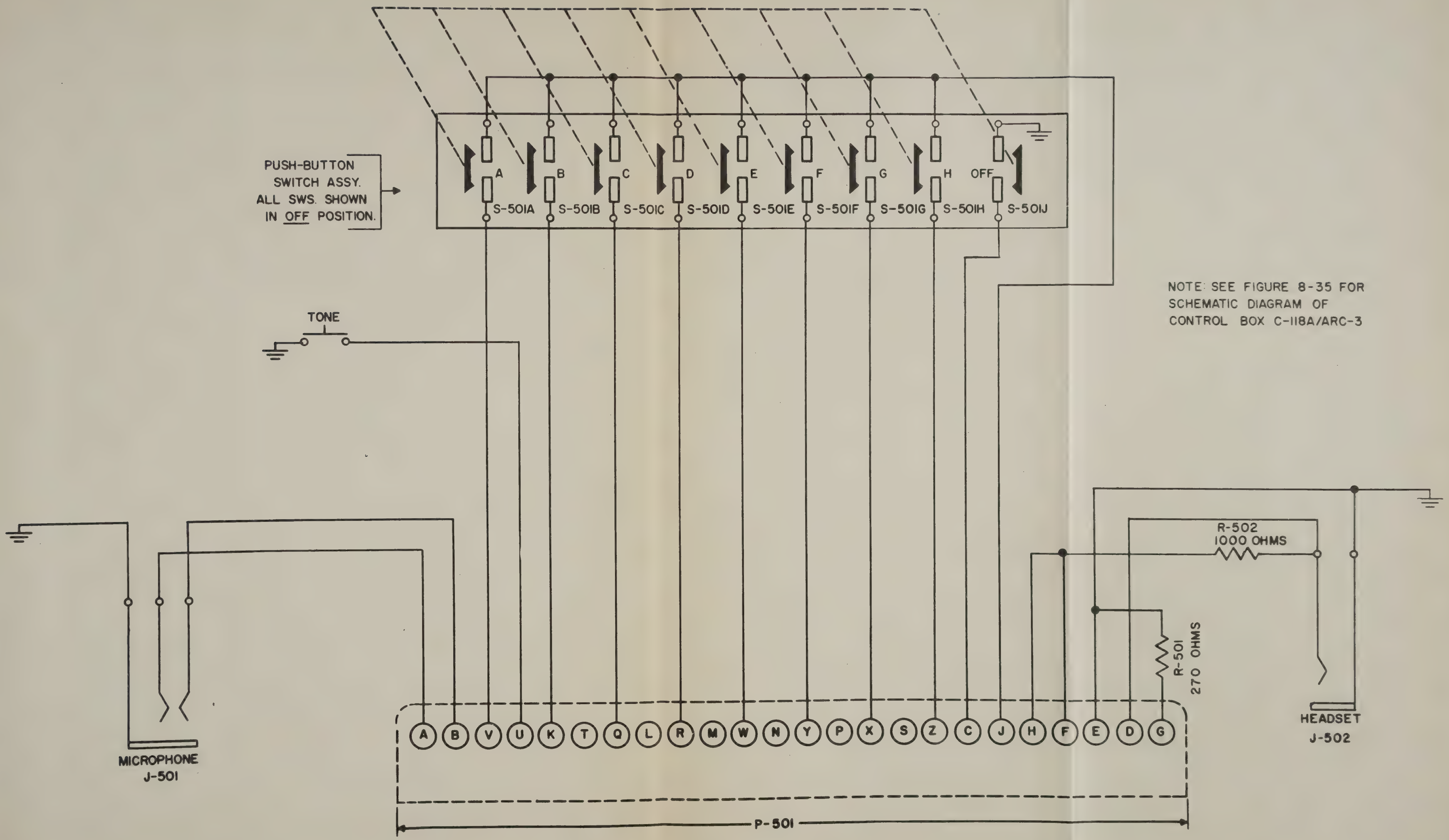
NOTES

1. PRODUCTION CHANGE CONVERTING J-68/ARC-3 TO J-68A/ARC-3 CHANGED FUSE HOLDERS FROM CLIP TYPE TO PANEL MOUNT TYPE.
2. A LATER PRODUCTION CHANGE CONVERTED K-401 & K-402 FROM OPEN TYPE RELAYS TO SEALED TYPE.

Figure 8-33. Power Junction Box J-68A/ARC-3—Schematic Diagram


NOTE: SEE FIGURE 8-35 FOR
SCHEMATIC DIAGRAM OF
CONTROL BOX C-118A/ARC-3
R-502
1000 OHMS
R-501
270 OHMS
E
D
G
HEADSET
J-502
MICROPHONE
J-501

-118/ARC-3—Schematic Diagram


PUSH-BUTTON SWITCH ASSY. ALL SWS. SHOWN IN OFF POSITION.
A
B
C
D
E
F
G
H
OFF
S-501A
S-501B
S-501C
S-501D
S-501E
S-501F
S-501G
S-501H
S-501J
TONE
MICROPHONE
J-501
R-502
1000 OHMS
R-501
270 OHMS
HEADSET
J-502
A
B
V
U
K
T
Q
L
R
M
W
N
Y
P
X
S
Z
C
J
H
F
E
D
G
P-501

NOTE: SEE FIGURE 8-35 FOR SCHEMATIC DIAGRAM OF CONTROL BOX C-118A/ARC-3

Figure 8-34. Control Box C-118/ARC-3—Schematic Diagram

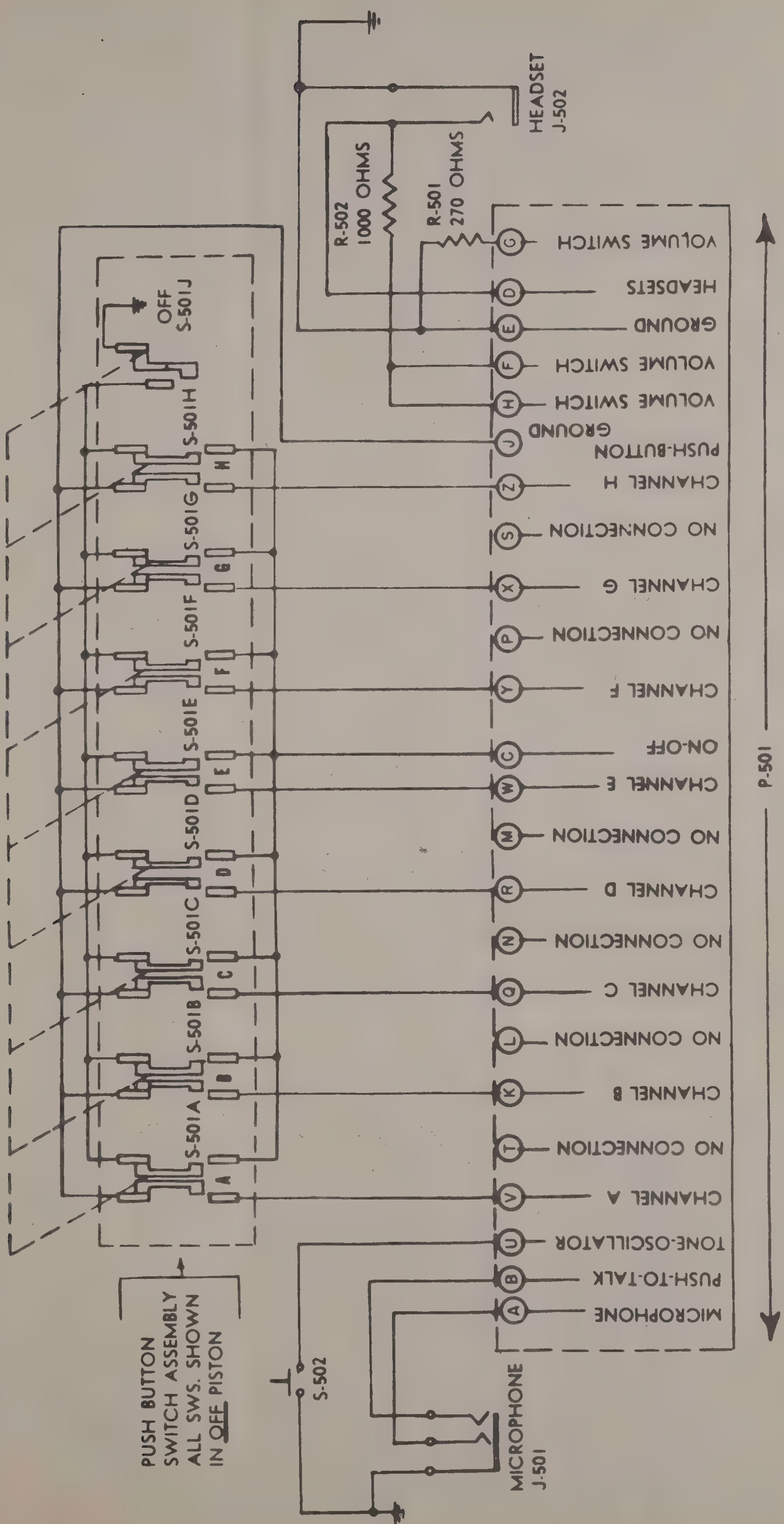
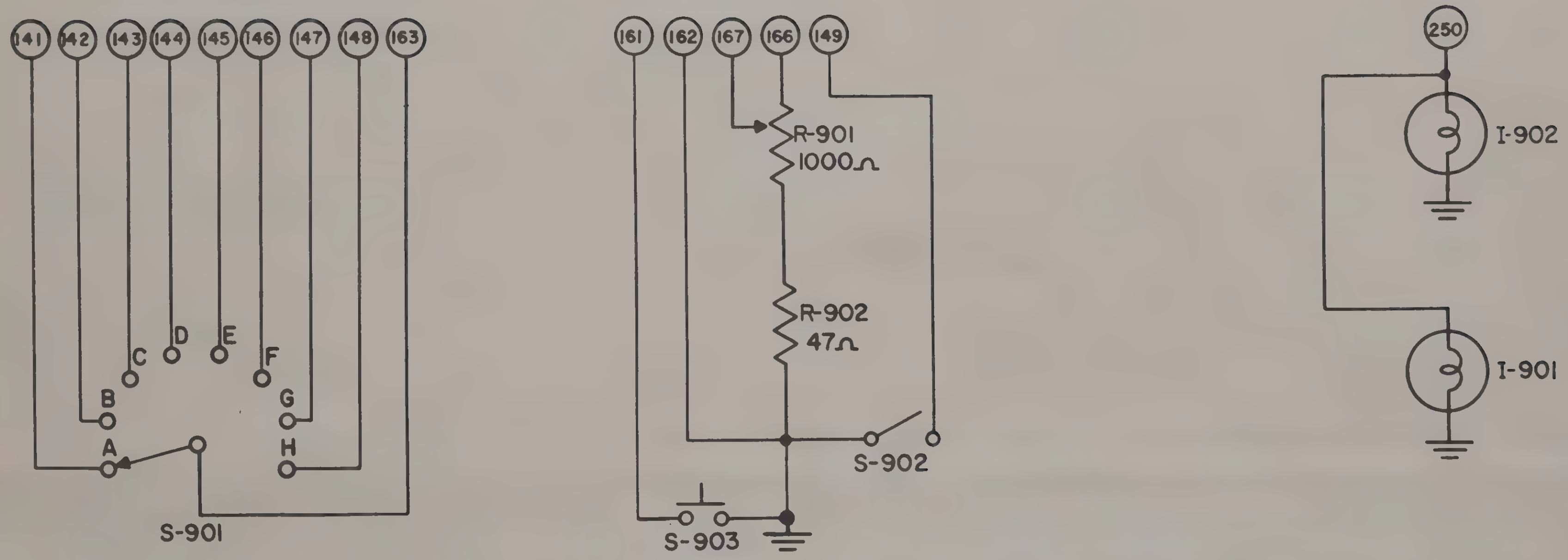
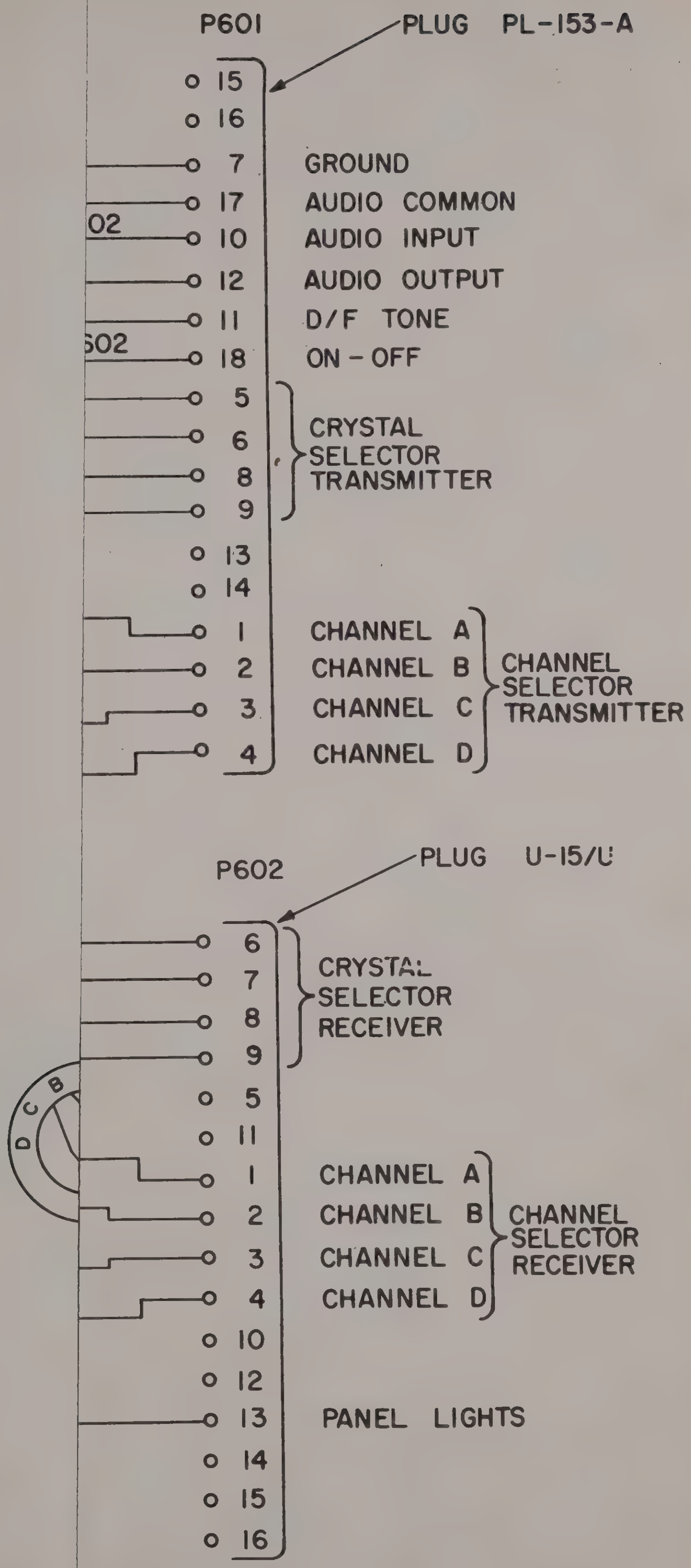

HEADSET
J-502
R-502
1000 OHMS
R-501
270 OHMS
OFF
S-501J
S-501H
S-501G
S-501F
S-501E
S-501D
S-501C
S-501B
S-501A
H
G
F
E
D
C
B
A
G VOLUME SWITCH
D HEADSETS
E GROUND
F VOLUME SWITCH
H VOLUME SWITCH
J PUSH-BUTTON GROUND
Z CHANNEL H
S NO CONNECTION
X CHANNEL G
P NO CONNECTION
Y CHANNEL F
C ON-OFF
W CHANNEL E
M NO CONNECTION
R CHANNEL D
N NO CONNECTION
Q CHANNEL C
L NO CONNECTION
K CHANNEL B
T NO CONNECTION
V CHANNEL A
U TONE-OSCILLATOR
B PUSH-TO-TALK
A MICROPHONE
P-501
PUSH BUTTON
SWITCH ASSEMBLY
ALL SWS. SHOWN
IN OFF PISTON
S-502
MICROPHONE
J-501

Figure 8-35. Control Box C-118A/ARC-3—Schematic Diagram

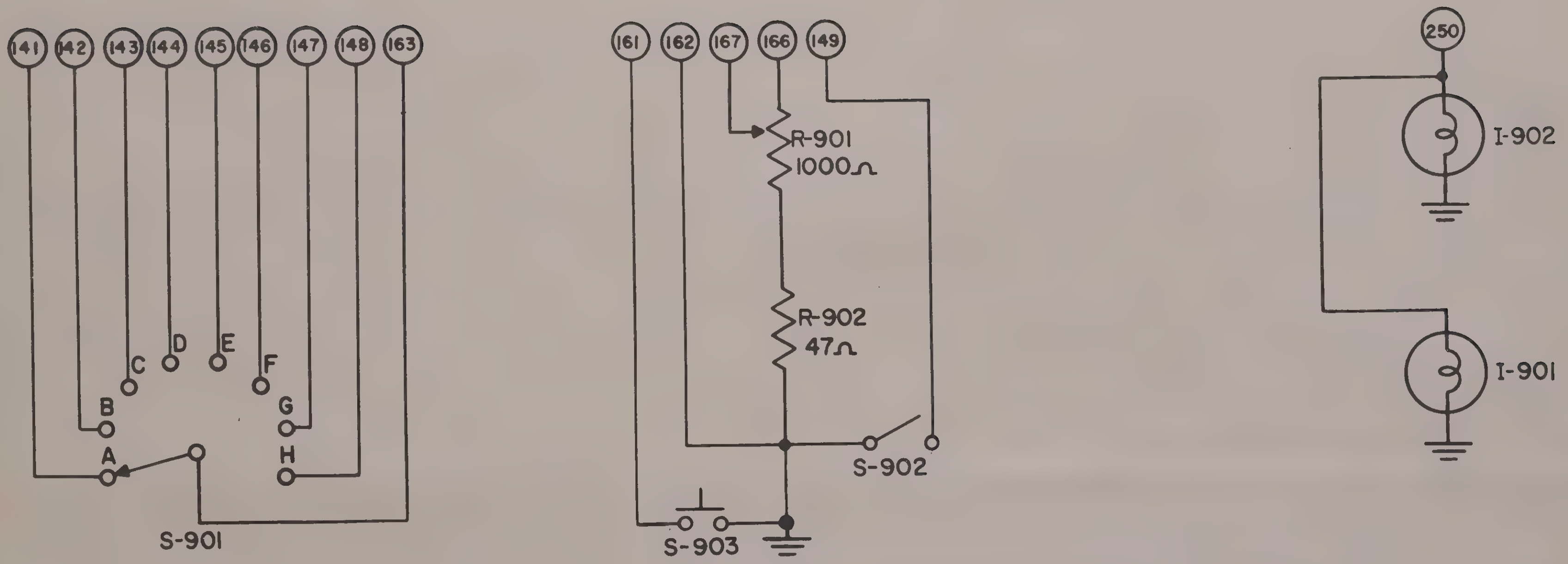

141
142
143
144
145
146
147
148
163
A
B
C
D
E
F
G
H
S-901
161
162
167
166
149
R-901
1000Ω
R-902
47Ω
S-902
S-903
250
I-902
I-901

NOTE 1:
I-901, I-902 AND CONNECTION DESIGNATED 250 WERE ADDED IN MODIFICATION CHANGING CONTROL PANEL C-404/A TO CONTROL PANEL C-404A/A.

Figure 8-36. Control Panel C-404/A or C-404A/A—Schematic Diagram

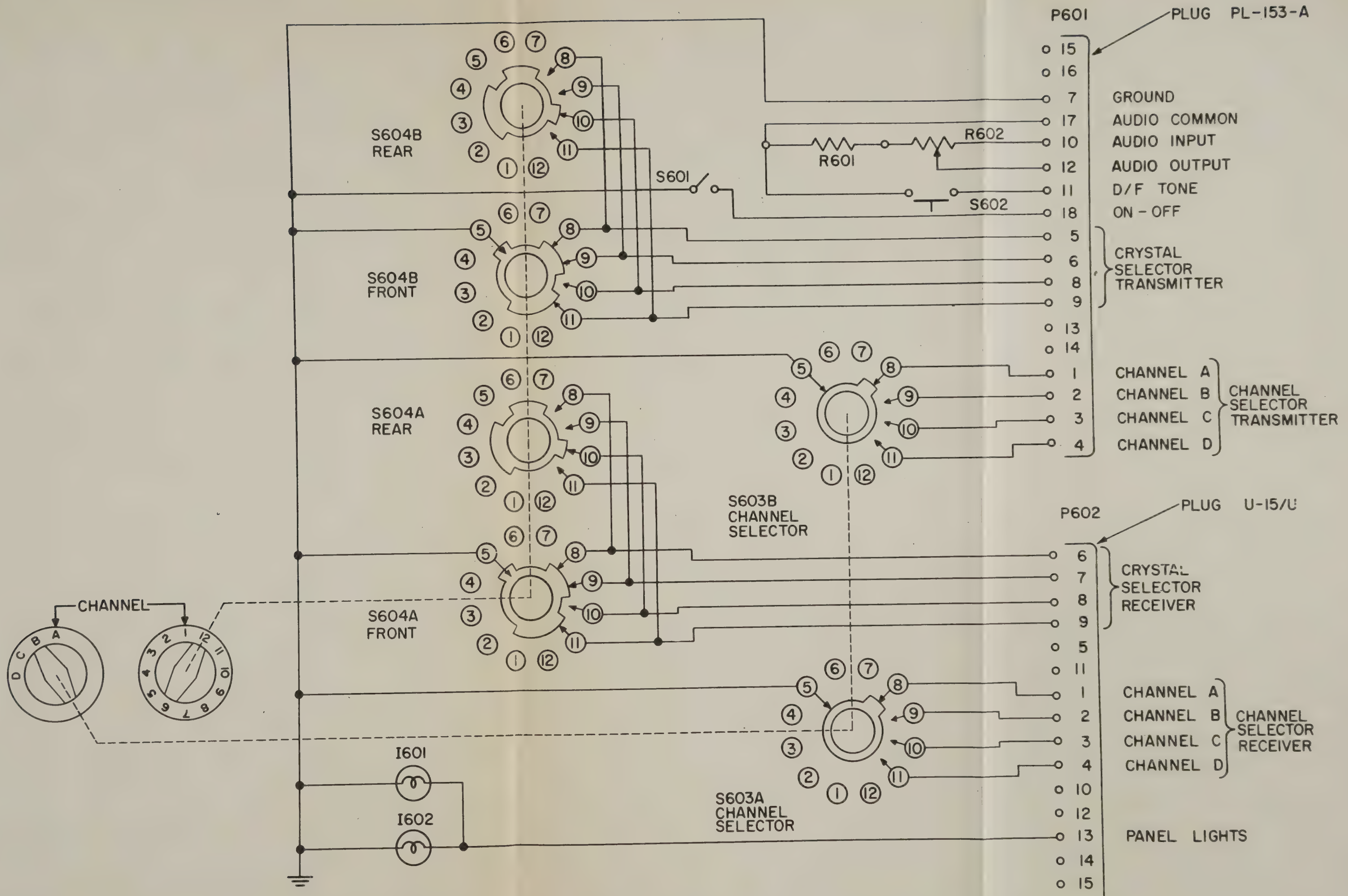

P601
PLUG PL-153-A
15
16
7 GROUND
17 AUDIO COMMON
02
10 AUDIO INPUT
12 AUDIO OUTPUT
11 D/F TONE
502
18 ON - OFF
5
6
8
9
CRYSTAL SELECTOR TRANSMITTER
13
14
1 CHANNEL A
2 CHANNEL B
3 CHANNEL C
4 CHANNEL D
CHANNEL SELECTOR TRANSMITTER
P602
PLUG U-15/U
6
7
8
9
CRYSTAL SELECTOR RECEIVER
5
11
D C B
1 CHANNEL A
2 CHANNEL B
3 CHANNEL C
4 CHANNEL D
CHANNEL SELECTOR RECEIVER
10
12
13 PANEL LIGHTS
14
15
16

t C-1400/ARC-49—Schematic Diagram


141
142
143
144
145
146
147
148
163
A
B
C
D
E
F
G
H
S-901
161
162
167
166
149
R-901
1000Ω
R-902
47Ω
S-902
S-903
250
I-902
I-901

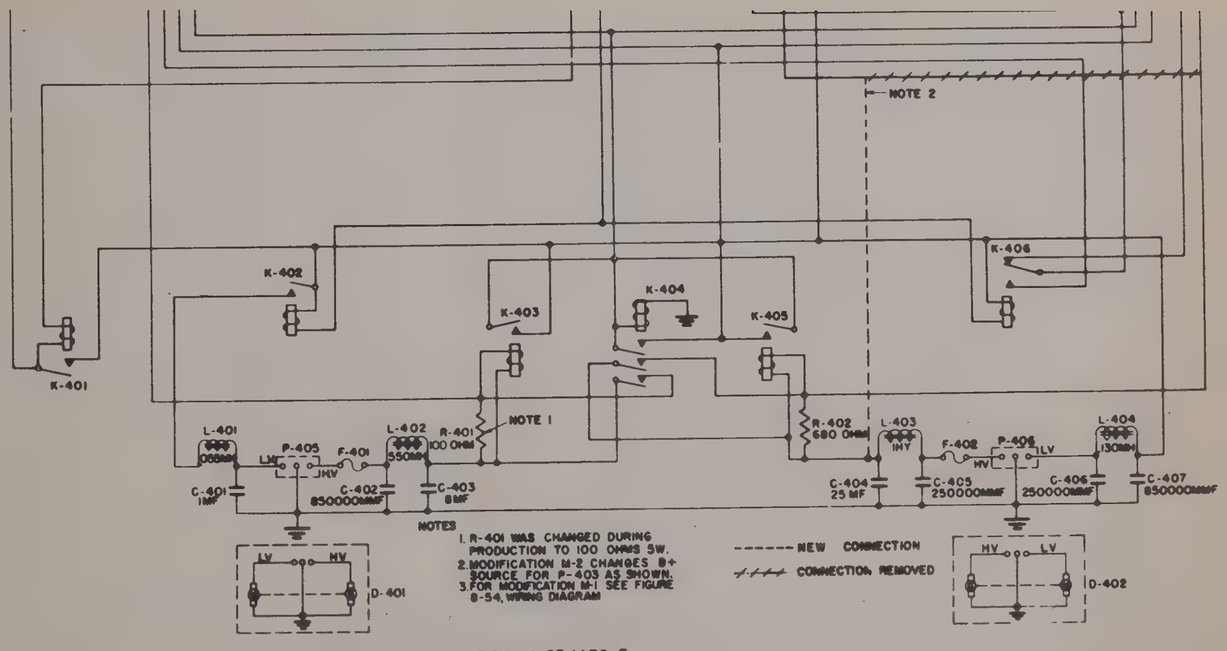
NOTE I:
I-901, I-902 AND CONNECTION DESIGNATED 250 WERE ADDED IN MODIFICATION CHANGING CONTROL PANEL C-404/A TO CONTROL PANEL C-404A/A.

Figure 8-36. Control Panel C-404/A or C-404A/A—Schematic Diagram


P601
PLUG PL-153-A
15
16
7 GROUND
17 AUDIO COMMON
10 AUDIO INPUT
12 AUDIO OUTPUT
11 D/F TONE
18 ON - OFF
5
6
8
9
CRYSTAL SELECTOR TRANSMITTER
13
14
1 CHANNEL A
2 CHANNEL B
3 CHANNEL C
4 CHANNEL D
CHANNEL SELECTOR TRANSMITTER
R601
R602
S601
S602
S604B REAR
S604B FRONT
S604A REAR
S604A FRONT
S603B CHANNEL SELECTOR
S603A CHANNEL SELECTOR
CHANNEL
A B C D
1 2 3 4 5 6 7 8 9 10 11 12
I601
I602
P602
PLUG U-15/U
6
7
8
9
CRYSTAL SELECTOR RECEIVER
5
11
1 CHANNEL A
2 CHANNEL B
3 CHANNEL C
4 CHANNEL D
CHANNEL SELECTOR RECEIVER
10
12
13 PANEL LIGHTS
14
15
16

NOTE:
SELECTOR SWITCHES AS SHOWN ARE SET FOR CHANNEL A-1

Figure 8-37. Control, Radio Set C-1400/ARC-49—Schematic Diagram


NOTE 2
K-406
K-402
K-404
K-403
K-405
K-401
L-401
.068MH
P-405
LV
HV
F-401
L-402
550MH
R-401
100 OHM
NOTE 1
C-401
1MF
C-402
850000MMF
C-403
8MF
LV
HV
D-401
R-402
680 OHM
L-403
1HY
F-402
P-406
HV
LV
L-404
130MH
C-404
25 MF
C-405
250000MMF
C-406
250000MMF
C-407
850000MMF
HV
LV
D-402
POWER JUNCTION BOX J-68/ARC-3

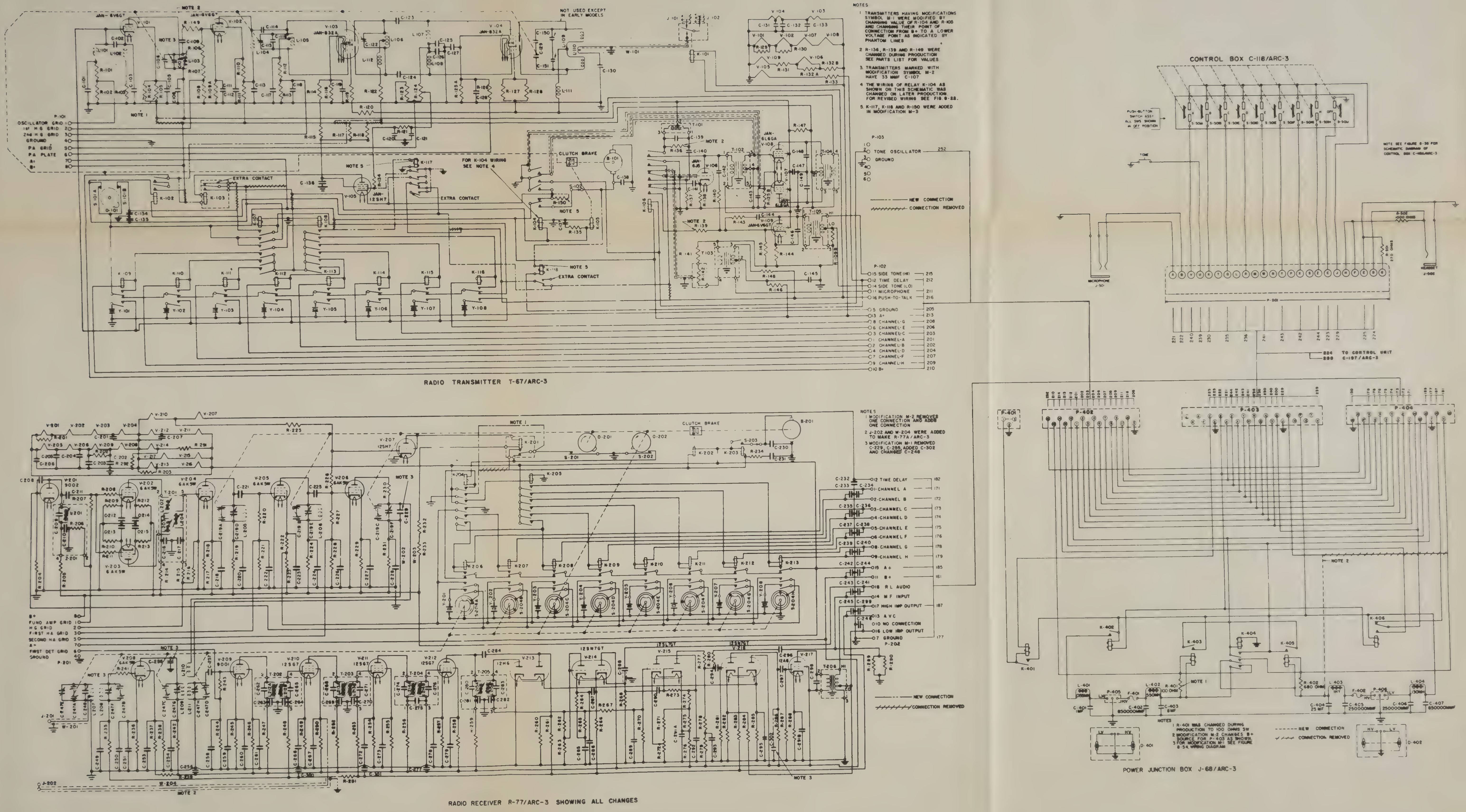
NOTES

1. R-401 WAS CHANGED DURING PRODUCTION TO 100 OHMS 5W.
2. MODIFICATION M-2 CHANGES B+ SOURCE FOR P-403 AS SHOWN.
3. FOR MODIFICATION M-1 SEE FIGURE 8-54, WIRING DIAGRAM

------ NEW CONNECTION

-/-/-/-/- CONNECTION REMOVED

gure 8-38. Radio Set AN/ARC-3—Overall Schematic for Fighter Installation Showing Early Production Wiring and All Modifications and Production Changes


RADIO TRANSMITTER T-67/ARC-3
RADIO RECEIVER R-77/ARC-3 SHOWING ALL CHANGES
CONTROL BOX C-118/ARC-3
POWER JUNCTION BOX J-68/ARC-3
NOT USED EXCEPT IN EARLY MODELS
CLUTCH BRAKE
EXTRA CONTACT
FOR K-104 WIRING SEE NOTE 4
P-101
OSCILLATOR GRID
1st HG GRID
2nd HG GRID
GROUND
PA GRID
PA PLATE
A+
B+
P-103
TONE OSCILLATOR
GROUND
P-102
SIDE TONE (HI)
TIME DELAY
SIDE TONE (LO)
MICROPHONE
PUSH-TO-TALK
GROUND
A+
CHANNEL-G
CHANNEL-E
CHANNEL-C
CHANNEL-A
CHANNEL-B
CHANNEL-D
CHANNEL-F
CHANNEL-H
B+
TO CONTROL UNIT C-197/ARC-3
MICROPHONE J-501
HEADSET J-502
P-501
P-401
P-402
P-403
P-404
P-301
P-202
TIME DELAY
CHANNEL A
CHANNEL B
CHANNEL C
CHANNEL D
CHANNEL E
CHANNEL F
CHANNEL G
CHANNEL H
A+
B+
R L AUDIO
M F INPUT
HIGH IMP OUTPUT
A V C
NO CONNECTION
LOW IMP OUTPUT
GROUND
FUND AMP GRID
HG GRID
FIRST HA GRID
SECOND HA GRID
FIRST DET GRID
- - - - - NEW CONNECTION
-/-/-/- CONNECTION REMOVED

NOTES

1 TRANSMITTERS HAVING MODIFICATIONS SYMBOL M-1 WERE MODIFIED BY CHANGING VALUE OF R-104 AND R-106 AND CHANGING THEIR POINT OF CONNECTION FROM B+ TO A LOWER VOLTAGE POINT AS INDICATED BY PHANTOM LINES

2 R-136, R-139 AND R-149 WERE CHANGED DURING PRODUCTION SEE PARTS LIST FOR VALUES

3. TRANSMITTERS MARKED WITH MODIFICATION SYMBOL M-2 HAVE 33 MMF C-107

4 THE WIRING OF RELAY K-104 AS SHOWN ON THIS SCHEMATIC WAS CHANGED ON LATER PRODUCTION. FOR REVISED WIRING SEE FIG. 8-28.

5. K-117, K-118 AND R-150 WERE ADDED IN MODIFICATION M-3

NOTE SEE FIGURE 8-36 FOR SCHEMATIC DIAGRAM OF CONTROL BOX C-[illegible]/ARC-3

NOTES

1 MODIFICATION M-2 REMOVES ONE CONNECTION AND ADDS ONE CONNECTION

2 J-202 AND W-204 WERE ADDED TO MAKE R-77A/ARC-3

3 MODIFICATION M-1 REMOVED C-229, C-285, ADDED C-302 AND CHANGED C-248

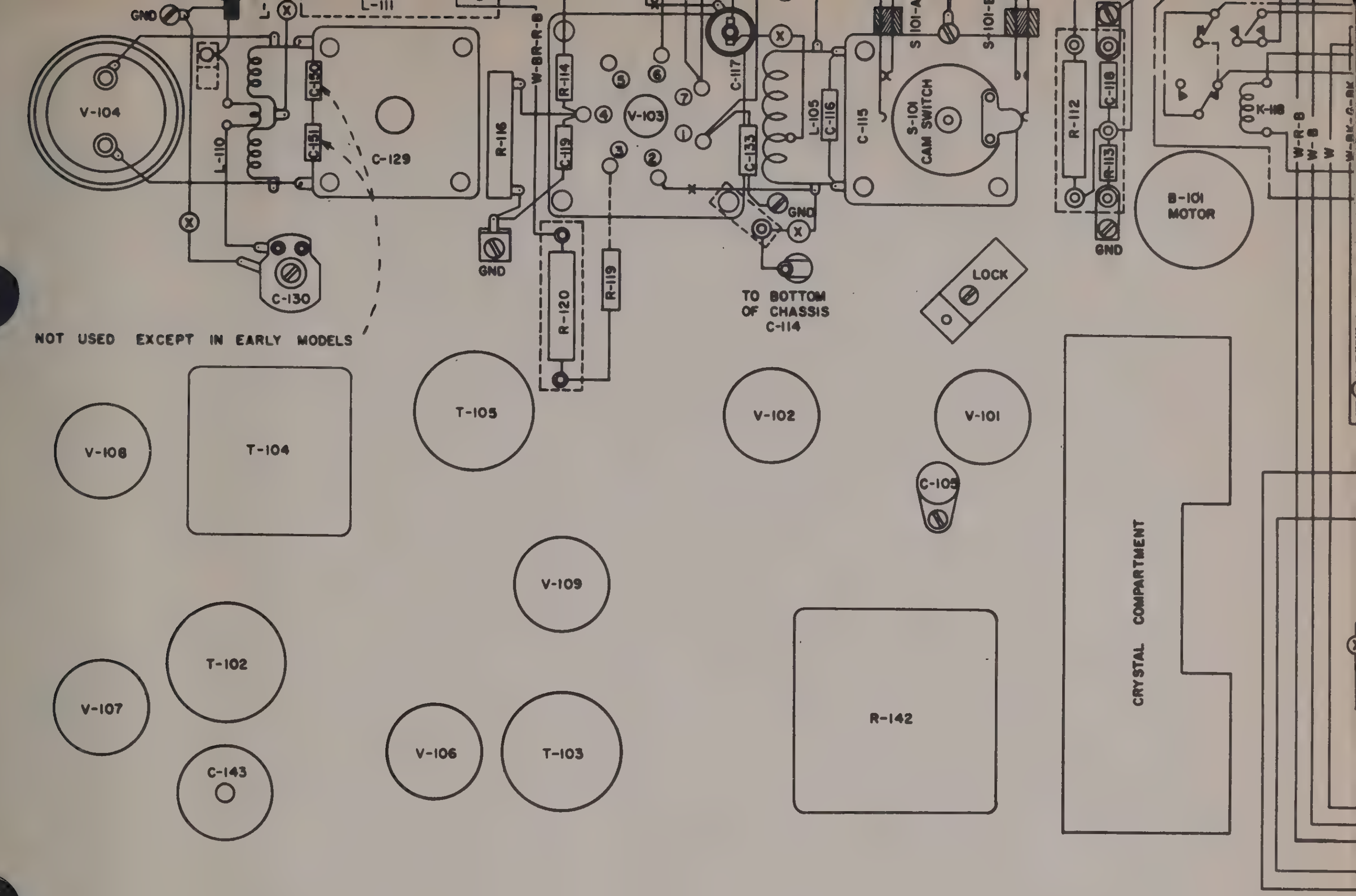
NOTES

1 R-401 WAS CHANGED DURING PRODUCTION TO 100 OHMS 5W

2 MODIFICATION M-2 CHANGES B+ SOURCE FOR P-403 AS SHOWN.

3 FOR MODIFICATION M-1 SEE FIGURE 8-54, WIRING DIAGRAM

Figure 8-38. Radio Set AN/ARC-3—Overall Schematic for Fighter Installation Showing Early Production Wiring and All Modifications and Production Changes


GND
L-111
V-104
L-110
C-150
C-151
C-129
C-130
NOT USED EXCEPT IN EARLY MODELS
R-116
W-BR-R-B
R-114
C-119
GND
R-120
R-119
V-103
C-117
C-133
L-105
C-116
C-115
GND
TO BOTTOM OF CHASSIS C-114
S-101-A
S-101-B
S-101 CAM SWITCH
R-112
C-118
R-113
GND
K-118
W-R-B
W-B
W
B-101 MOTOR
LOCK
V-108
T-104
T-105
V-102
V-101
C-105
CRYSTAL COMPARTMENT
V-109
T-102
V-107
C-143
V-106
T-103
R-142

TOP OF CHASSIS

NOTES:

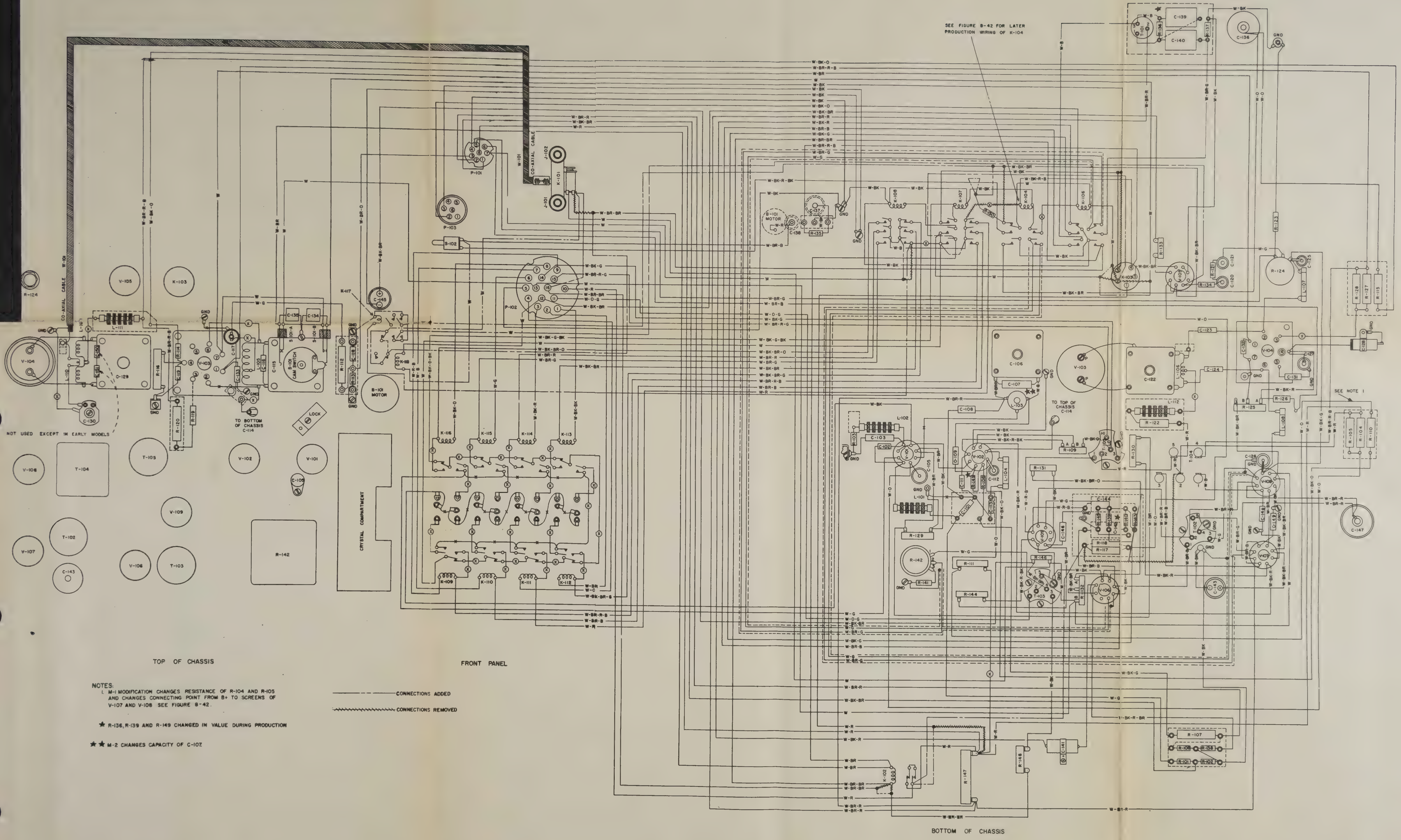
1. M-1 MODIFICATION CHANGES RESISTANCE OF R-104 AND R-105 AND CHANGES CONNECTING POINT FROM B+ TO SCREENS OF V-107 AND V-108 SEE FIGURE 8-42.

★ R-136, R-139 AND R-149 CHANGED IN VALUE DURING PRODUCTION

★★ M-2 CHANGES CAPACITY OF C-107.

——— — — ——— CONNECTIONS

∿∿∿∿∿∿∿∿∿ CONNECTIONS


SEE FIGURE 8-42 FOR LATER PRODUCTION WIRING OF K-104
CO-AXIAL CABLE W-101
R-124
NOT USED EXCEPT IN EARLY MODELS
TO BOTTOM OF CHASSIS C-114
TO TOP OF CHASSIS C-114
CRYSTAL COMPARTMENT
B-101 MOTOR
S-101 CAM SWITCH
LOCK
P-101
P-102
P-103
J-101
J-102
K-101
SEE NOTE 1
GND
TOP OF CHASSIS
FRONT PANEL
BOTTOM OF CHASSIS

NOTES:
1. M-1 MODIFICATION CHANGES RESISTANCE OF R-104 AND R-105 AND CHANGES CONNECTING POINT FROM B+ TO SCREENS OF V-107 AND V-108 SEE FIGURE 8-42.

★ R-136, R-139 AND R-149 CHANGED IN VALUE DURING PRODUCTION

★★ M-2 CHANGES CAPACITY OF C-102

—— — — —— CONNECTIONS ADDED

∿∿∿∿∿∿∿∿ CONNECTIONS REMOVED

Figure 8-41. Radio Transmitter T-67/ARC-3—Wiring Diagram Showing Early Production Wiring and Modification M-3

(For Latest Production Wiring With M-3 Modification, See Figure 8-42).

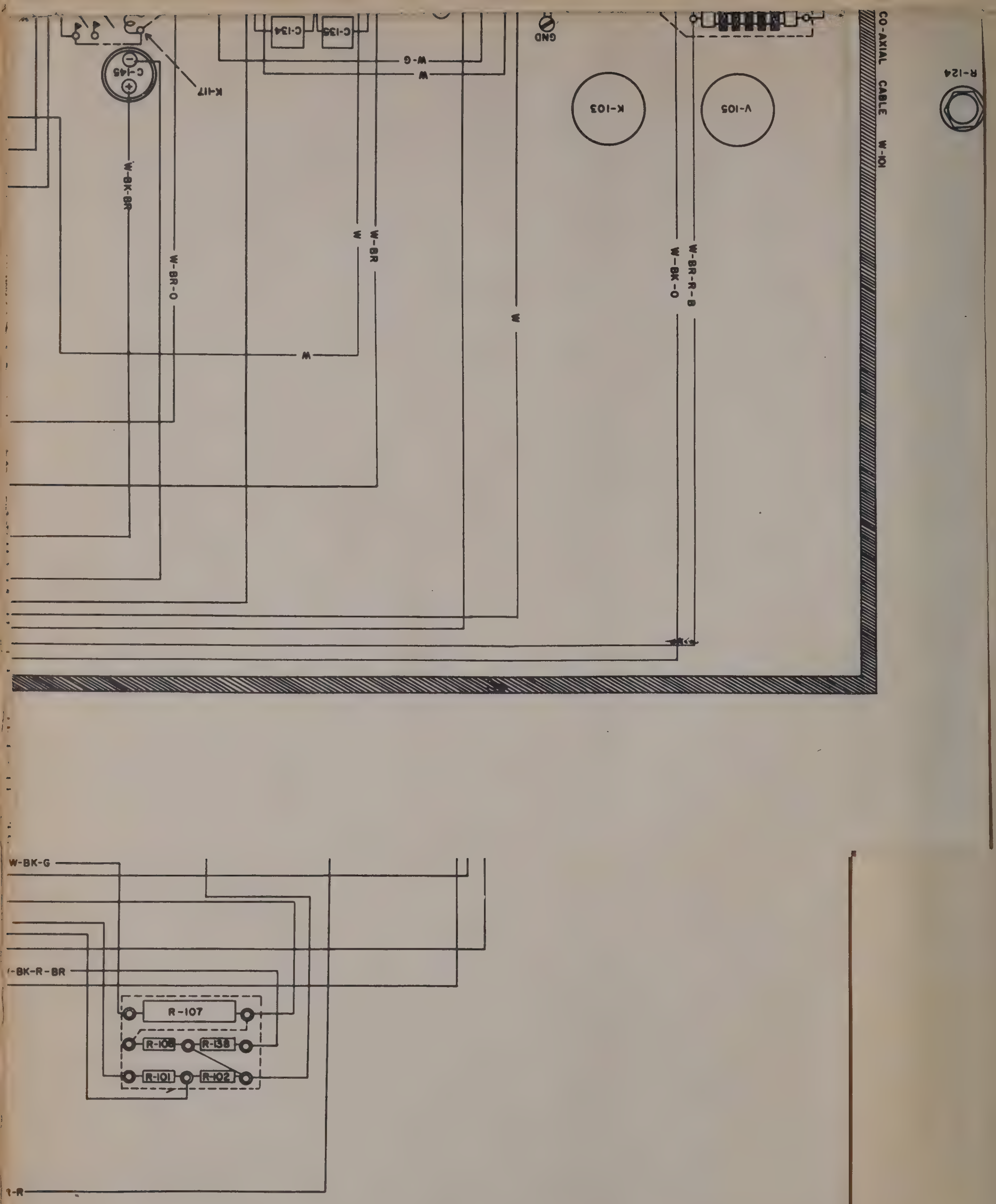
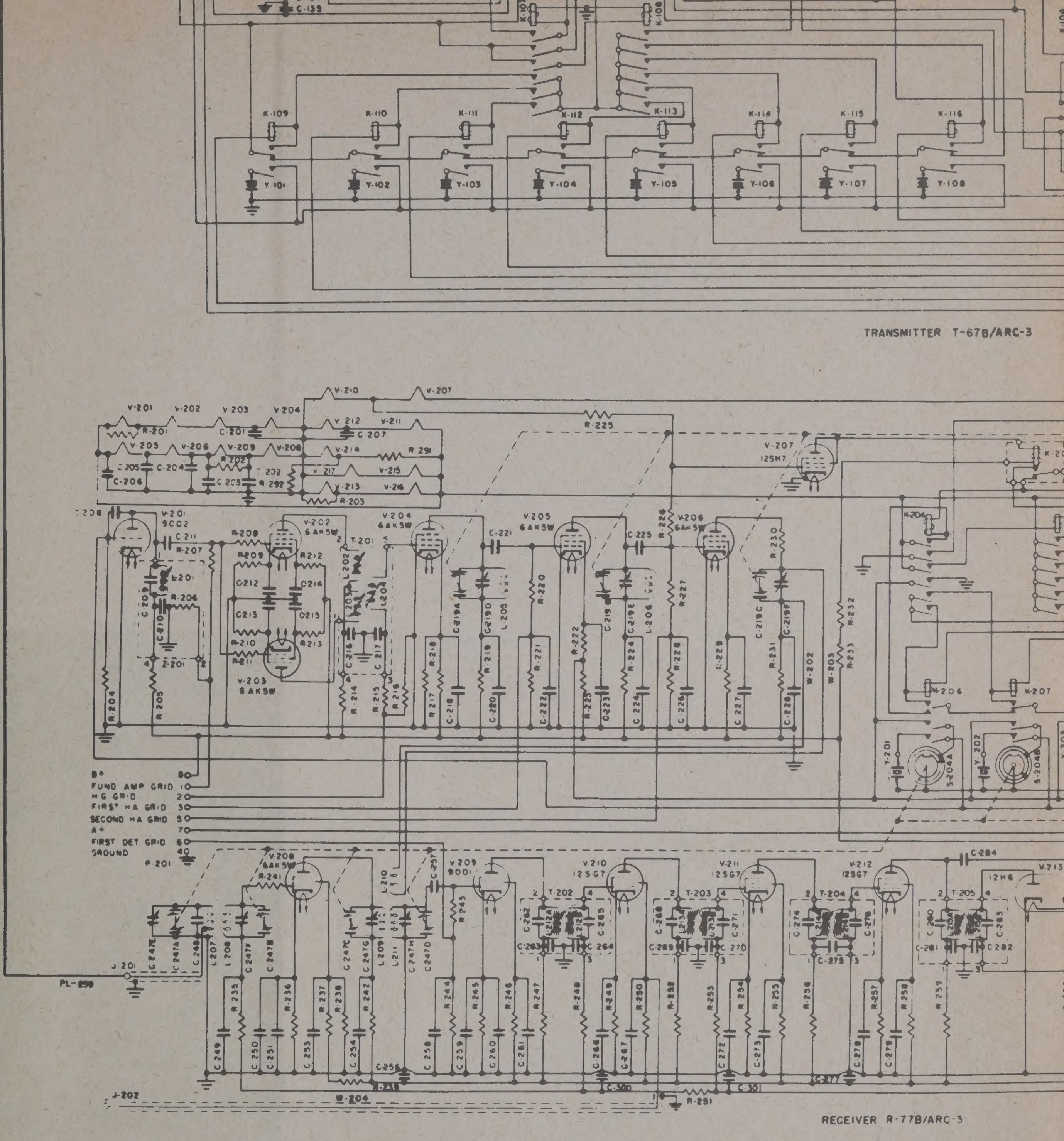

C-145
K-117
C-134
C-135
GND
W-G
W
K-103
V-105
CO-AXIAL CABLE W-101
R-124
W-BK-BR
W-BR-O
W
W-BR
W
W
W-BR-R-B
W-BK-O
W-BK-G
-BK-R-BR
R-107
R-108
R-138
R-101
R-102
-R

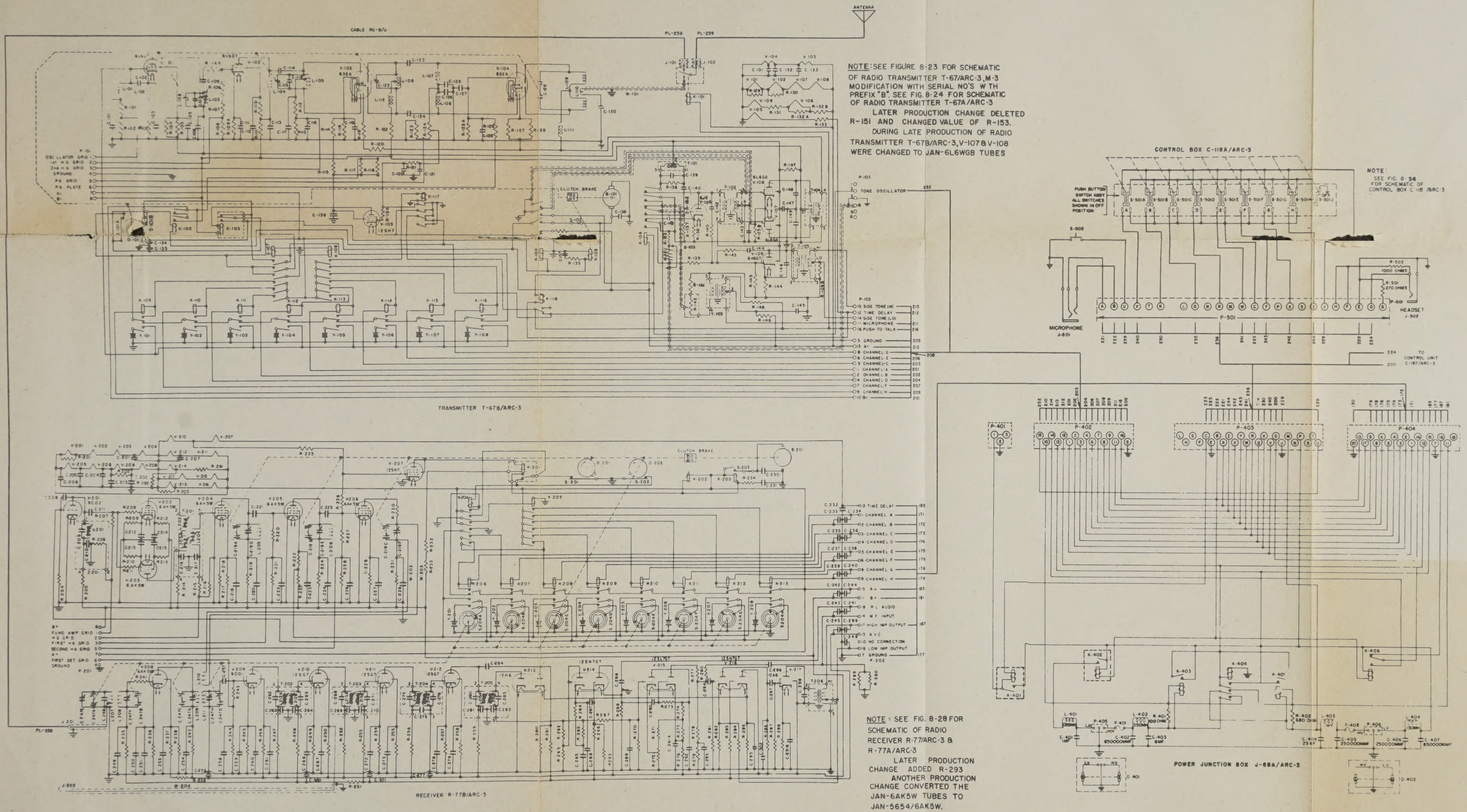
Figure 8-41. Radio Transmitter T-67/ARC-3—Wiring Diagram Showing Early Production Wiring and Modification M-3

(For Latest Production Wiring With M-3 Modification, See Figure 8-42).


C-135
K-107
K-108
K-109
K-110
K-111
K-112
K-113
K-114
K-115
K-116
Y-101
Y-102
Y-103
Y-104
Y-105
Y-106
Y-107
Y-108
V-201
V-202
V-203
V-204
V-205
V-206
V-209
V-208
V-210
V-207
V-212
V-211
V-214
V-217
V-215
V-213
V-216
R-201
R-202
R-203
R-225
R-291
R-292
C-201
C-202
C-203
C-204
C-205
C-206
C-207
C-208
V-201 9C02
V-202 6AK5W
V-203 6AK5W
V-204 6AK5W
V-205 6AK5W
V-206 6AK5W
V-207 12SH7
T-201
Z-201
L-201
L-202
L-203
L-204
L-205
L-206
C-211
C-221
C-225
R-204
R-205
R-206
R-207
R-208
R-209
R-210
R-211
R-212
R-213
R-214
R-215
R-216
R-217
R-218
R-219
R-220
R-221
R-222
R-223
R-224
R-226
R-227
R-228
R-229
R-230
R-231
R-232
R-233
W-202
W-203
K-204
K-206
K-207
Y-201
Y-202
S-204A
S-204B
B+ 8
FUND AMP GRID 1
HG GRID 2
FIRST HA GRID 3
SECOND HA GRID 5
A+ 7
FIRST DET GRID 6
GROUND 4
P-201
J-201
PL-259
V-208 6AK5W
V-209 9001
V-210 12SG7
V-211 12SG7
V-212 12SG7
V-213 12H6
T-202
T-203
T-204
T-205
L-207
L-208
L-209
L-210
L-211
R-235
R-236
R-237
R-238
R-239
R-241
R-242
R-243
R-244
R-245
R-246
R-247
R-248
R-249
R-250
R-251
R-252
R-253
R-254
R-255
R-256
R-257
R-258
R-259
C-249
C-250
C-251
C-253
C-254
C-256
C-258
C-259
C-260
C-261
C-262
C-263
C-264
C-265
C-266
C-267
C-268
C-269
C-270
C-271
C-272
C-273
C-274
C-275
C-276
C-277
C-278
C-279
C-280
C-281
C-282
C-283
C-284
C-300
C-301
J-202
W-204

TRANSMITTER T-67B/ARC-3

RECEIVER R-77B/ARC-3


ANTENNA
CABLE RG-8/U
PL-259
PL-259
TRANSMITTER T-67B/ARC-3
P-103
TONE OSCILLATOR
CLUTCH BRAKE
P-102
CONTROL BOX C-118A/ARC-3
PUSH BUTTON SWITCH ASSY ALL SWITCHES SHOWN IN OFF POSITION
S-502
MICROPHONE J-501
HEADSET J-502
P-501
R-502 1000 OHMS
R-501 270 OHMS
TO CONTROL UNIT C-197/ARC-3
P-401
P-402
P-403
P-404
RECEIVER R-77B/ARC-3
P-202
POWER JUNCTION BOX J-68A/ARC-3

NOTE: SEE FIGURE 8-23 FOR SCHEMATIC OF RADIO TRANSMITTER T-67/ARC-3, M-3 MODIFICATION WITH SERIAL NO'S WITH PREFIX "B". SEE FIG. 8-24 FOR SCHEMATIC OF RADIO TRANSMITTER T-67A/ARC-3

LATER PRODUCTION CHANGE DELETED R-151 AND CHANGED VALUE OF R-153.

DURING LATE PRODUCTION OF RADIO TRANSMITTER T-67B/ARC-3, V-107 & V-108 WERE CHANGED TO JAN-6L6WGB TUBES

NOTE: SEE FIG. 8-34 FOR SCHEMATIC OF CONTROL BOX C-118 /ARC-3

NOTE: SEE FIG. 8-28 FOR SCHEMATIC OF RADIO RECEIVER R-77/ARC-3 & R-77A/ARC-3

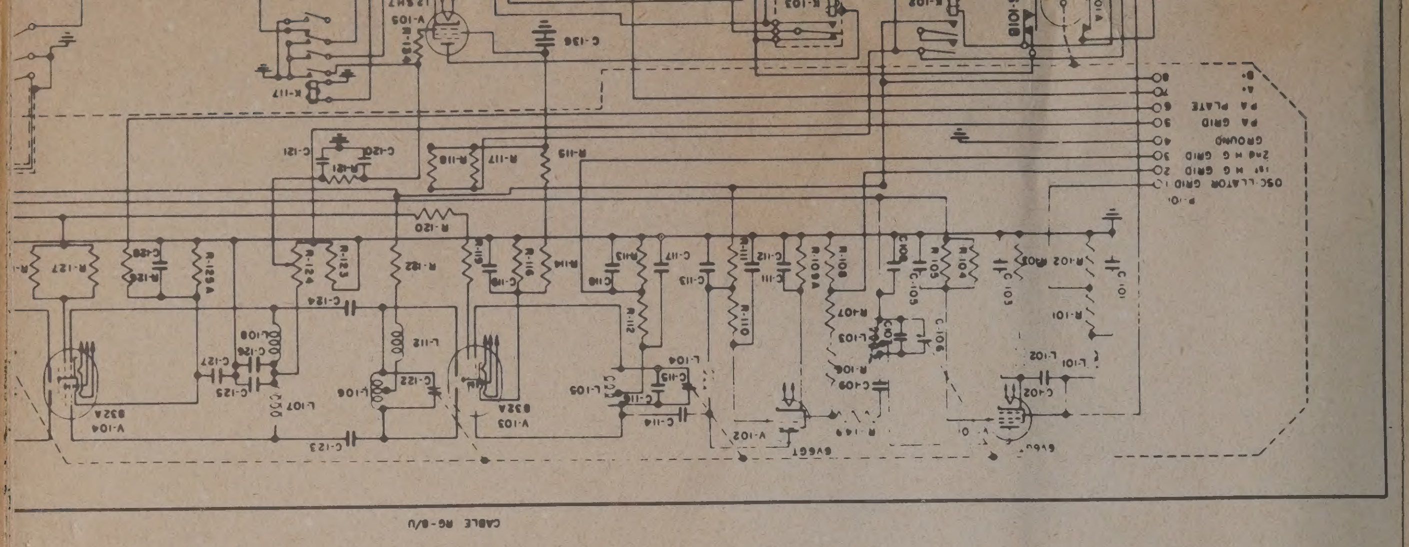
LATER PRODUCTION CHANGE ADDED R-293

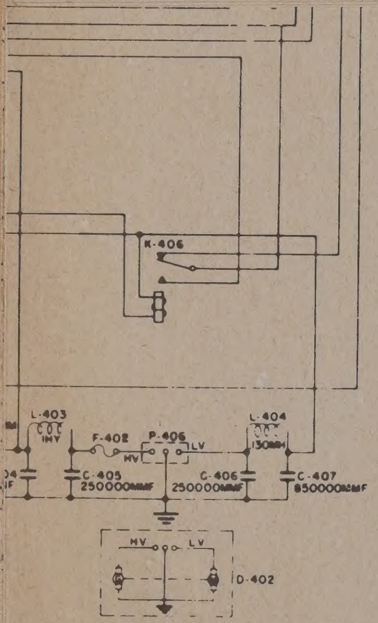
ANOTHER PRODUCTION CHANGE CONVERTED THE JAN-6AK5W TUBES TO JAN-5654/6AK5W.

NOTE:

LATER PRODUCTION CHANGE CONVERTED K-401 & K-402 FROM OPEN TYPE TO SEALED TYPE RELAYS.
SEE FIG. 8-32 FOR SCHEMATIC OF POWER JUNCTION BOX J-68/ARC-3.

Figure 8-39. Radio Set AN/ARC-3—Overall Schematic for Fighter Installation


CABLE RG-8/U
OSCILLATOR GRID 1
1st M G GRID 2
2nd M G GRID 3
GROUND 4
PA GRID 5
PA PLATE 6
P-101
V-104
832A
V-103
832A
6V6GT
R-120
C-123
C-124


K-406
L-403
1HY
F-402
P-406
HV
LV
L-404
130MH
C-405
250000MMF
C-406
250000MMF
C-407
850000MMF
D-402

NOTE:

LATER PRODUCTION CHANGE CONVERTED K-401 & K-402 FROM OPEN TYPE TO SEALED TYPE RELAYS.
SEE FIG. 8-32 FOR SCHEMATIC OF POWER JUNCTION BOX J-68/ARC-3.

AN/ARC-3—Overall Schematic for Fighter Installation